HISTORY OF ESTABLISHMENT

OF THE

American Association of School Physicians

WITH PROCEEDINGS

OF

FIRST ANNUAL MEETING

AT

CHICAGO OCTOBER 15, 1928

VOLUME 1

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The proceedings of this association are published yearly on the authority of the executive committee. Copies may be obtained through the Secretary, Dr. William A. Howe, State Education Building, Albany, N. Y.

TABLE OF CONTENTS

	PAGE
History of organization of the association	3
Second conference	3
Constitution and by-laws	4
Distribution of reprints	8
Association membership from October 17, 1927 to November 1, 1928	9
Members	10
First annual meeting	17
Morning session	17
Welcome address, Dr. Arnold H. Kegel	17
Education Qualifications for School Physicians, Dr. Haven Emerson	17
A Study of Medical Inspection and Health Service in Normal Schools and Teacher Training Colleges	19
Discussion of Doctor DeWeese's Report, Dr. Grace S. Wightman	34
Standardization of School Medical Inspection, J. Bruce McCreary, M.D.	36
When Should We Operate for Tonsils, Porter B. Brockway, M.D.	40
School Ventilation in Cleveland, L. W. Childs, M.D.	45
Afternoon session	52
A Model School Medical Inspection Program in a First Class City, John A. Ceconi, M.D.	52
A Model Rural School Health Program, B. T. McDowell, M.D.	71
A Model School Medical Inspection Program in Rural Schools, James F. Rogers, M.D.	73
A Standard Group Snellen Test for School Children, F. E. Harrington, M.D.	77
Activities of the Illinois State Medical Society in Public Health Work, R. R. Ferguson, M.D.	80
The Contribution of a Nurse to a School Health Program, Helen F. McCaffrey, R. N.	84
Evening session	91
Remarks by Dr. John A. Ceconi	91
Secretary and Treasurer's Report, by Dr. Frank L. Salisbury	92
Remarks by Dr. Harold H. Mitchell	92
The Health Supervision of School Children with Heart Disease in the Los Angeles City Schools, Sven Lokrantz, M.D.	93
Remarks by Dr. Matthias Nicoll	99
Important Contributors to a School Health Program, C. E. Turner, Dr. P.H.	97
The Relation of Mental and General Health to Dental Health, Dr. Guy S. Milberry	103
Remarks by Miss Sally Lucas Jean	105
Remarks by Doctor Schweitzer	107
Remarks by Doctor Cornell	108

OFFICERS

of the

AMERICAN ASSOCIATION OF SCHOOL PHYSICIANS

from

OCTOBER 17, 1927 to OCTOBER 15, 1928

President, WILLIAM A. HOWE, M.D., Albany, N. Y.
Vice Presidents, JOHN A. CECONI, M.D., Boston, Mass.
WALTER S. CORNELL, M.D., Philadelphia, Pa.
Secretary and Treasurer, FRANK L. SALISBURY, M.D., City Hall, Cleveland, Ohio

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HASBROUCK H. DELAMATER, M.D., St. Joseph, Mo.
GEORGE P. BARTH, M.D., Milwaukee, Wis.
RICHARD A. BOLT, M.D., Berkeley, Calif.

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President, JOHN A. CECONI, M.D., Boston, Mass.
Vice Presidents, L. W. CHILDS, M.D., Cleveland, Ohio
SVEN LOKRANTZ, M.D., Los Angeles, Calif.
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FREDERICK S. BURKE, M.D., Toronto, Can.
F. E. HARRINGTON, M.D., Minneapolis, Minn.

HISTORY OF ORGANIZATION OF THE AMERICAN ASSOCIATION OF SCHOOL PHYSICIANS

When it was first suggested that school physicians should organize to consider the many problems involved in their service, and to secure more and better qualified medical leadership in the work, the responses received were widespread and in hearty accord.

Among school physicians it was found that similar problems existed in many places. People untrained in medicine were being increasingly substituted for physicians, and leadership in the work was often being entrusted to lay people.

Physicians were more and more appreciating their need of greater interest in the work, and of better preparation to render efficient service. With this situation clearly existing throughout the country an informal meeting of school physicians was called at Buffalo, N. Y., on October 13, 1926. This conference was called when the A. P. H. A. was holding its fifty-fifth annual convention in Buffalo. Fifty-six physicians attended the meeting. The following states and Canada were represented: Canada, Colorado, Illinois, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio and Wisconsin. At six-thirty o'clock an informal dinner was held at the Hotel Buffalo. This was also well attended. The interest taken was marked. Free discussion took place. Only one opinion prevailed, *that School Physicians Should Organize*. Formal action was taken on a motion made by Dr. A. C. Schaefer of Buffalo, seconded by Dr. M. Levitan of Rome, N. Y., that an Association of School Physicians should be formed. The motion was unanimously carried. The Chairman was authorized to appoint such committee as might be necessary to arrange for another meeting in October, 1927.

SECOND CONFERENCE HELD IN CINCINNATI ON OCTOBER 17, 1927

The interest manifested at the Buffalo conference continued to grow. It spread throughout the United States and in Canada. Many physicians though not able to attend the second meeting sent their regrets and wanted to see an Association started. The committee appointed to call another conference arranged with the A. P. H. A. to meet in Cincinnati on Monday, October 17, 1927. The Sinton Hotel was made headquarters. Notices of the proposed meeting were sent to several hundred school physicians in the United States and Canada. No formal program was presented. Sessions were held at 9:30 A. M. and at 2:00 P. M.

An informal dinner was served at 6:30 o'clock.

All of the sessions including the dinner were well attended. School physicians were present from 19 states. The program was developed from the floor and was participated in by many and was very interesting. During the morning session it was again unanimously voted to organize an Association of School Physicians.

The Chairman, Dr. William A. Howe of Albany, N. Y., was then authorized to appoint the following committees:

1—On Constitution and By-Laws.
2—On Nominations.

The following were at once named on such committees:

On Nominations:

Dr. Frank L. Salisbury, Chief School Health Service, Cleveland, Ohio.
Dr. Walter S. Cornell, Board of Health, Philadelphia, Pa.
Dr. Albert L. Brannack, Director of Health Education, Pontiac, Michigan.
Dr. Henry H. Brinkerhoff, Director of School Health Service, Jersey City, N. J.
Dr. B. T. McDowell, Ontario County Health Director, Bristol Center, N. Y.

On Constitution and By-Laws:

Dr. Arthur C. Schaefer, Assistant Health Commissioner, Buffalo, N. Y.
Dr. L. W. Childs, Supervisor of Health Service, Cleveland, Ohio.
Dr. John A. Ceconi, Director of the Dept. of School Hygiene, Boston, Mass.
Dr. Mary E. Crawford, Dept. of Medical Inspection, Winnipeg, Canada.

At the afternoon session the Committee on Constitution and By-Laws submitted the following report:

Mr. Chairman, Ladies and Gentlemen:

Your Committee on Constitution and By-Laws beg leave to submit the following report and move its adoption.

Constitution and By-Laws of American Association of School Physicians

Name of Association

This Association shall be named the American Association of School Physicians.

Membership in Association—Active Members

To be eligible to membership one must possess the following qualifications:

(a) A graduate in medicine and licensed to practice as such.
(b) Actively engaged in health work, educational or otherwise, in schools.

Purposes of the Association

The purposes of the Association shall be—

(a) To create and maintain a deeper interest among all physicians in health service in schools.
(b) To study and advise regarding the various health problems involved in school health service and to insure, under medical direction, their proper management.
(c) To cultivate a closer cooperative relationship among physicians engaged in health work in schools, and to establish a better understanding in the profession as to the purposes of the service.
(d) To more effectively coordinate the various agencies, medical, dental and others interested in and willing to cooperate in school health service.

Officers of the Association

The officers of the Association shall consist of the following:

President
1st Vice President
2nd Vice President
Secretary and Treasurer
Executive Committee of Eight

Meetings of the Association

There shall be an annual meeting of the Association to be called at such time and place as may be determined by the officers of the Association.

Membership Dues

The annual membership dues in the Association shall be two dollars for each calendar year.

Election of Officers

The President, two Vice Presidents, Secretary and Treasurer, shall each year be elected at the annual meeting and shall hold office for one year or until their successors have been chosen. At the first meeting of the Association eight members of the Executive Committee shall be chosen. Their terms of office shall be from one to four years to be determined by lot. Each year thereafter two members of the Executive Committee shall be chosen for a period of four years.

Publications of Association

Should funds permit, the President, Secretary and Treasurer shall each year publish the proceedings of the Association and shall furnish a copy to each member whose dues are paid in full.

BY-LAWS

The usual parliamentary rules governing similar organizations shall be adopted by this Association.

The officers of the Association shall perform such duties as are incumbent on similar officers in like organizations.

All officers of the Association shall be elected by ballot. A majority shall be necessary to elect.

Fifteen active members of the Association shall constitute a quorum for the transaction of business.

The officers of the Association shall constitute its Executive Committee of which the President shall be Chairman.

The President of the Association shall be authorized to call such meetings of the Executive Committee, as he shall desire or upon requests of a majority of such Committee.

The President may appoint such committees as he may find necessary to further the purposes of the Association.

The Constitution may be amended at any annual meeting by a two-thirds vote of active members present voting for such amendment. Any proposed amendment shall be printed on the notice to members announcing the time and place of the annual meeting at which such amendment is to be considered.

The By-Laws may be amended at any annual meeting by a two-thirds vote of the members.

DR. ARTHUR C. SCHAEFER,
Assistant Health Commissioner, Buffalo, N. Y.
DR. L. W. CHILDS,
Supervisor of Health Service, Cleveland, Ohio.
DR. JOHN A. CECONI,
Director of the Dept. of School Hygiene, Boston, Mass.
DR. ALBERT L. BRANNACK,
Director of Health Education, Pontiac, Mich.
DR. MARY E. CRAWFORD,
Dept. of Medical Inspection, Winnipeg, Canada.
COMMITTEE ON CONSTITUTION AND BY-LAWS.

The report of the Committee on Constitution and By-Laws was carefully considered and finally unanimously adopted as above.

The Committee on Nominations then submitted its report as follows:

Mr. Chairman, Ladies and Gentlemen:

Your Committee on Nominations beg leave to submit the fol-

lowing as officers of the American Association of School Physicians, subject to the Constitution and By-Laws just adopted.

Should there be no other nominations presented we would move that the Secretary of this meeting be empowered to cast one ballot for the officers recommended. The motion was seconded and unanimously carried. The Secretary then cast one ballot and the Chairman declared the following officers to be elected:

President: Dr. William A. Howe, State Medical Inspector of Schools, Albany, N. Y.

Vice Presidents:

Dr. Walter S. Cornell, Board of Health, Philadelphia, Pa.

Dr. John A. Ceconi, Director of the Dept. of School Hygiene, Boston, Mass.

Secretary and Treasurer: Dr. Frank L. Salisbury, Chief, School Health Service, Cleveland, Ohio.

Executive Committee:

Dr. Henry H. Brinkerhoff, Director of School Health Service, Jersey City, N. J.

Dr. Albert L. Brannack, Director of Health Education, Pontiac, Mich.

Dr. Frederick L. Fenno, Medical Director, New Orleans, La.

Dr. Talmage O. Woolley, Houston, Texas.

Dr. Amos A. Crooks, Board of Education, Peoria, Ill.

Dr. Hasbrouck H. DeLamater, Director of School Health Service, St. Joseph, Mo.

Dr. George P. Barth, City Hall, Milwaukee, Wis.

Dr. Richard A. Bolt, University of California, Berkeley, Cal.

Within a few weeks the following committees were appointed by the President:

Committee on Standardization of Medical Inspection and Health Service in Normal Schools and Colleges

Chairman—Dr. A. O. DeWeese, Director Division Health, State Normal College, Kent, Ohio.

Dr. James F. Edwards, Director of Hygiene, Iowa State College, Ames, Iowa.

Dr. Ina V. Burt, School Physician, State Normal College, Fredonia, N. Y.

Dr. C. E. Turner, Mass. Institute of Technology, Cambridge, Mass.

Dr. Glenadine Snow, State Normal School, Ypsilanti, Mich.

Dr. Guy S. Millberry, Dean Dental College, San Francisco, Cal.

Dr. C. Floyd Haviland, Manhattan State Hospital, New York City.

Committee on Standardization of Methods and Forms for School Medical Inspectors and Health Service

Chairman—Dr. J. Bruce McCreary, Director Bureau of Child Health, State Department of Health, Harrisburg, Pa.
Dr. Joseph C. Palmer, Chief Medical Inspector, Syracuse, N. Y.
Dr. O. B. Nesbitt, Director of Medical Inspection, Gary, Ind.
Dr. Charles B. Lewis, Providence, R. I.
Dr. Sven Lokrantz, Chief Medical Director, Los Angeles, Cal.
Dr. Mary E. Crawford, Dept. of Medical Inspection, Winnipeg, Canada.
Dr. John A. Ceconi, Director of the Dept. of School Hygiene, Boston, Mass.
Dr. Frederick L. Fenno, Medical Director, New Orleans, La.
Dr. Talmage O. Woolley, Houston, Texas.

Committee on Educational Qualifications for School Physicians

Chairman—Dr. Haven Emerson, College of Physicians and Surgeons, New York City.
Dr. Walter S. Cornell, Board of Health, Philadelphia, Pa.
Dr. L. W. Childs, Supervisor of Health Service, Cleveland, Ohio.
Dr. John A. Ceconi, Director of the Dept. of School Hygiene, Boston, Mass.
Dr. George P. Barth, City Hall, Milwaukee, Wis.
Dr. Frederick C. Burke, City Dept. of Health, Toronto, Canada.

DISTRIBUTION OF REPRINTS

As might well be expected funds were not available during the first year to enable the Association to print and distribute any material to its members. We were able however at a small expense to send to each member the following reprints:

On June 21, 1928:

What Is Heart Disease?
Heart Disease and Its Prevention
Cardiac Survey in Boston
The Early Diagnosis of Tuberculosis
Let Your Doctor Decide

Tuberculosis in the Public Schools
School Ventilation in Syracuse
How Much Fresh Air Does the School Child Need?
Speech Improvement in Jamestown, N. Y.
Medical Examinations

On September 18, 1928:
Fatigue in Children
Parental Guidance
About Feeblemindedness
The Place of Mental Hygiene in the Public Schools
About Insanity
Mental Hygiene and Childhood
Mental Hygiene Bulletin
Suggestions for Reading in Mental Hygiene
Sacrifice of the Children
Accepting Life
Behavior Patterns
Your Emotions
Our Children
Healthy Womanhood

ASSOCIATION MEMBERSHIP FROM OCTOBER 17, 1927, TO NOVEMBER 1, 1928

From October 17, 1927, to November 1, 1928, 324 school physicians joined the Association. This is a remarkable growth. It includes members in 26 states, in Canada and in the District of Columbia. It is strongly representative of physicians deeply interested in school medical inspection and health service. It mobilizes by membership the desire so frequently expressed, that *"School Physicians Should Organize."*

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AMERICAN ASSOCIATION OF SCHOOL PHYSICIANS

November 1, 1928

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TABLE GIVING NUMBER OF MEMBERS BY STATES ON NOVEMBER 1, 1928

Alabama	2	New Hampshire	1
Arkansas	1	New Jersey	21
California	34	New York	103
Canada	4	Ohio	24
Colorado	1	Oklahoma	1
Connecticut	2	Oregon	2
District of Columbia	1	Pennsylvania	12
Illinois	8	Rhode Island	1
Indiana	7	Texas	3
Iowa	3	Vermont	1
Louisiana	2	Virginia	3
Massachusetts	70	Washington	2
Michigan	8	West Virginia	1
Minnesota	4	Wisconsin	1
Missouri	2		
		Total	324

FIRST ANNUAL MEETING

The first annual meeting of the American Association of School Physicians was held at Chicago on October 15, 1928. One hundred and twelve people registered at the morning session. Seventy-eight people attended the dinner session. The attendance throughout was large and the interest taken marked.

The following program was presented:

MORNING SESSION
9:30 o'CLOCK

ROOM 430A STEVENS HOTEL

WELCOME ADDRESS

DR. ARNOLD H. KEGEL, COMMISSIONER OF HEALTH, CHICAGO

I am very glad, indeed, to welcome to the City of Chicago the American Association of School Physicians. I trust that your deliberations may be profitable to you and that your visit in our city may be a pleasant one.

As school physicians it will, no doubt, be of interest to each one of you to know that in Chicago the work of school physicians is recognized as the very basis on which is built the health, mental and physical, of its school children.

At the present time there is being planned a new program for the school children of Chicago based on defects found in school children. It is hoped that we will build up the health of the entire populace by dividing our program into three divisions: first, corrective; second, educational; and third, by physical education.

We realize the magnitude of the problems before us and we shall attend your program anticipating that much of value in our contemplated program will be presented.

EDUCATION QUALIFICATIONS FOR SCHOOL PHYSICIANS

DR. HAVEN EMERSON, NEW YORK CITY

Tenure of office, adequacy of salary, competence for the service required are recognized indispensable factors in putting the public employment of technical and professional positions on a basis satisfactory alike to the office holder and to the public.

The European countries which have developed health activities of special merit, and in particular Great Britain, have required that physicians employed for the protection of the health of school children be qualified by completing certain courses in accepted educational institutions in addition to those included in preparation for licensure to practice medicine.

A beginning in this direction has been made by the New York State Department of Education as expressed in the following

text of a regulation bearing upon the position of whole time school physicians in instances where the state contributes a portion of the salary.

By the requirement of a recent Regents Rule in New York State physicians to be qualified for certification as school medical supervisors shall possess the following qualifications:

1. Graduation from a medical school registered by the State Education Department and licensed to practice medicine in New York State.

2. One year of acceptable interneship. Five years of successful practice in medicine may be accepted in lieu of one year of interneship.

3. Six semester hours of postgraduate work in a school or schools of medicine in such subjects and in such institutions as may be approved by the State Commissioner of Education. The following subjects indicate the type of instruction that should be included in such postgraduate courses:

(a) Medical examination of school children.
(b) Psychiatric problems of school age.
(c) Problems of growth and nutrition.
(d) Preventable defects of eyes, ears, teeth, posture.
(e) School sanitation.
(f) Communicable disease control.

4. Six semester hours of postgraduate work in a school or schools of education in such subjects and in such institutions as may be approved by the State Commissioner of Education. The following subjects indicate the type of instruction that should be included in such postgraduate courses:

(a) Principles of health education.
(b) Organization and administration of health education in public schools.

The State Commissioner of Education may grant a temporary certificate to physicians who present satisfactory evidence of successful experience for three or more years in medical inspection and health service.

The temporary license shall be valid for only one year, but may be renewed twice upon presentation of evidence of postgraduate work as suggested in paragraphs 3 and 4 above.

Where undergraduate medical instruction and training have included special preparation in the field of health service equal to the qualifications set up for postgraduate work, such undergraduate preparation may be accepted for the certification of medical supervisors.

These requirements should lead to a vast improvement in the quality of medical inspection, since heretofore very few medical inspectors in any State have had any special training for this work.

Up to the present time the only place where courses covering the subject matter of this requirement have been offered has been in the Summer Session of Columbia University where since 1922 classes have been held in July and August at first for a six weeks' period and in 1927 and 1928 for three weeks.

It is to be hoped that the initiative of New York will be followed elsewhere and that other institutions of higher education with medical schools will offer such special courses as are offered at Columbia.

There is no likelihood that teachers training or normal colleges will be able to offer to physicians courses adequate or appropriate for qualifying those who wish to enter school medical service, as they now prepare teachers for entry and advancement in the field of classroom educational work.

It is believed that the public approval and respect for school medical service will in the long run depend upon the acknowledgment by appointing boards, superintendents, or principals of schools that the full time school doctor should be selected only because of his special equipment by training and experience for this work.

The school physician should be included in the school faculty on a basis with other chiefs of department or educational divisions and this can be urged only where the physician is at least as much of an expert in his field as are the teachers of mathematics, the natural sciences, and the languages, in theirs.

Every effort of school authorities should be made to so assemble school populations under central, district or county direction that the employment of whole time school physicians may be economically justified. Only by having the undivided interest of qualified physicians can the true worth of school medical service be made apparent and effective for the school child and as an indispensable element in the program of community health protection and development.

A STUDY OF MEDICAL INSPECTION AND HEALTH SERVICE IN NORMAL SCHOOLS AND TEACHER TRAINING COLLEGES

By the Committee on Standardization of Medical Inspection and Health Service in Normal Schools

PART 1

The Importance of Health Service in Teacher Training Institutions.

Good health and physical fitness comparatively speaking are of more importance in the class room teacher than in the individual in almost any other profession or occupation. Industrial and commercial concerns are interested in the health and physical fitness of those they employ, because they are interested in the conservation of time and money spent in training employes; protec-

tion from industrial compensation; and in the efficiency of the individual employed. The colleges, universities and professional schools are interested in the health and physical fitness of the student because they realize that it is an important factor in success and in the development of character and personality. They realize, therefore, that it is as much the duty of the school to guide, direct and develop the health and physical fitness of the student as it is to promote his mental attainments.

Teacher Training Institutions should be interested in all these factors and more. As the industrial and commercial concerns, they should be interested in the selection of students who are physically fit to eliminate the expense of time and money in training of teachers. They should be interested in protecting the school unit from loss of time and disability compensation due to the teacher's lack of health and physical fitness. But in the relation between the teacher's health and her physical fitness and efficiency, the Teachers Training Institution must realize that they have a unique, special and specific problem.

Specific Problems in Teacher Training Institutions.

The class room teacher must guide, direct and develop bodies as well as minds. She produces the incentive that inspires children to strive to become physically perfect and to keep their bodies strong, healthy and useful. It is needless to say that in dealing with immature minds, she cannot do this unless she is an example of such a condition herself. Then again it is those things in nature which have developed as nature intended them, those things which are healthy and useful, that give us joy and pleasure, inspire the best that is in us and satisfy our sense of beauty. On the other hand, it is those things which have not developed as nature intended them, the unhealthy, imperfect things of nature that are sordid and depressing. Surely the children of our public schools deserve to be protected from the unhealthy sordidness and depression activated by the unhealthy teacher. The healthy boy or girl is active, vigorous and "outdoor minded." The teacher who is not active, vigorous and "outdoor minded" cannot understand and be in sympathy with the normal, healthy child. More than that she cannot be the enthusiastic leader of children, childhood sports and games in the great outdoors, with its fresh air, exercises, sunshine, and essential health giving properties. In many localities in America, the traditional custom on the part of institutions of training for teaching young men and women who are not physically fit for other occupations must be met. That the teacher training institutions are conscious of their responsibility and are measuring up to it, is shown in this study of their activities.

PART 2

The Present Status of Student Health Service. The Extent and Scope.

In this study one hundred strictly Teacher Training Institutions, City Normal, State Normal and Teachers Colleges were selected at random from the United States Educational Directory as representative of various sections of the United States. From this selection it was possible to make a reliable study of fifty schools. These were well scattered over the United States and located in thirty-three different states. To this was added schools available to various members of the committee making a possible study of sixty-five different schools.

In order to unify the study and secure reliable information on what was believed to be the essential factors in Student Health Service in Teacher Training institutions, the following outline was used, and comprises the major part of the study.

I. Student Health Service.
   1. Is a complete health examination required of students who are taking Teacher Training Courses?
   2. Are such subsequent examinations made as may be indicated as necessary?
   3. By whom are these examinations made?

II. Health Advice and Health Supervision of Teacher Training Students.
   1. What medical and health advice other than in hygiene classes is provided?
   2. By whom is this given?
   3. Are regular hours provided for this service? How many per week?

III. Correction of Remediable Health Defects.
   1. What provision, if any, is made for the correction of remediable defects?
   2. Are students excluded from Teacher Training courses or denied Teacher Training Diplomas until such corrections are made?

IV. Health Condition as a Factor in Teacher's Standing.
   1. Is the student's attitude and conduct in regard to scientific health factors made a basis for recommendations for professional positions?
   2. Is the student's Health Condition a factor in his final grades and school record?
   3. Are Teacher Training Students excused from the regular course in Physical Education work because of physical or health disability?
   4. If so, what per cent of the students are excused? Statistical.....; Approximately.....

V. 1. What courses in Science with number of hours are required of Students in Elementary Teacher Training Courses?
   2. What courses in Science with number of hours are required in secondary Teacher Training Courses?

VI. Health Education—Method and Content Subject Matter Courses.
   1. Beside the content subject matter courses in Physiology, what courses are required in Health Education? What subjects are elective?
   2. By whom are they given?
   3. What facilities, if any, are provided for practice teaching or observation of Health Education in Training school?

VII. Organization.
1. What is the plan of organization to correlate and coordinate the Medical Direction and Health Service provided by the institution?
2. Who is the Director?

I. Health Examinations.

Seventy-six per cent of these institutions require a complete health examination on entrance. Only twelve do not require it, nine of them in the southern states. Six per cent of the teacher training institutions give a partial examination. That is, only nine fail to give a complete or partial health examination.

A committee of medical men last year reported a study of 131 colleges and universities. Chairman Mock reported a complete examination in 64 per cent plus of the schools. Strictly teacher training institutions make a better showing in this regard.

It is obvious that the value of the health examination depends in a measure upon follow-up and subsequent examinations. Eighty-two per cent of the teacher training institutions follow up the entrance examinations with such subsequent examinations as may be indicated.

II. Training and Equipment of the Individual Who Gives the Health Examinations.

The personal value to be derived by the prospective teacher from such a health examination is obviously the same as it would be for any other individual. In addition, however, this health examination of the teacher has an added educational value. She must be informed and interested in a similar examination for her pupils and become the most important individual in the task of educating the general public as regards the value and importance of an annual health examination. In her case then, it is essential that the examination be done by one who makes a specialty of this work and understands its educational background. That the teacher training institutions are meeting this problem is shown by the fact that in 62 per cent of the cases, the examination is given by the college physician; by local physicians in 12 per cent; by the family physicians in 2 per cent; and by the Physical Education department in 4 per cent.

III. Health Advice and Medical Consultation.

Competent medical and health advice for a teacher training student is another important educational factor, and one that deserves more attention on the part of our medical societies and organizations. Several experiences in connection with teacher training institutions tend to show this.

In one institution of a thousand teacher training students, the reference shelves of the library had numerous publications of Osteopathy, New Thought and the like, all of which of course had been contributed. Medical Science was not represented. Another institution had a girl in the graduating class who during her

four years in college life had been contributing regularly to a magnetic healer who was treating her for a tubercular hip. In one institution a nurse in charge of the dormitories was calling in regularly a practitioner of a cult to treat medical cases. The chairman assigned to a teacher training student a well-known book by a well-known author on methods of teaching hygiene and health. The student brought in an absurd statement given as a scientific truth, the pseudo-scientific premise of a well-known cult. When asked where she obtained it, she contended it was in the reference. When she produced the book it was reported to the secretary of the American Medical Association. In a letter from the author, he stated that the statement had been inserted without his knowledge and that the copies would be called in, and corrections made. The book, however had gone through one edition, and thousands of teachers had used it. This shows to what an extent cults will go to reach the public through the most potent educational factor, the public school teacher. In one school the individual who had charge of all the health supervision given was a Christian Scientist. In another a chiropractor in the Physical Education department exhibited his powers. In one normal school during a smallpox epidemic many teachers quit school rather than submit to vaccination.

In the study of sixty-five representative teacher training institutions, 18 per cent made no provisions for medical and health advice; in 30 per cent some advice was given by the college physician; in 24 per cent some advice was given by the college physician and school nurse; in 8 per cent none except by the nurse; in 8 per cent some advice was given by the examining physician and physical education teacher; in 6 per cent by the physical education teacher and local physicians; and in 2 per cent by the nutrition department.

IV. Regular Hours Needed for Medical Consultation and Advice.

Two things are obvious. First, the casual medical and health advice given as indicated in most cases above would be very inefficient. Second, if this service is to be worth while, regular hours must be provided for consultation with the student. Teacher training institutions have not as yet met this condition. Only 53 per cent of the teacher training institutions have regular hours for consultation. The number of hours given to such service in the institutions providing it, ranged from one hour to forty hours per week with an average of eight and one half hours per week.

The most unsatisfactory arrangements from the standpoint of those responsible for its administration seem to be those cases in which students called at the regular office of some local physician. The service in such cases was little used and was farthest from a helpful, educational health program.

A part-time physician having regular hours at the college office was fairly satisfactory in most cases. The students apparently grew to consider the service as a part of the educational program and a part of the campus activities.

The most satisfactory arrangement was in those cases in which the physician gave all of his time to the college. In most cases such a physician did some teaching and became the director of all health activities.

In all cases the value of the service depended upon the training and aptitude of the physician for health education activities. There is after all quite a difference between a medical examination and a health examination. Although the findings and technique are the same, the standpoint from which they are presented, used and studied with young people must be materially different. One normal school president expressed it by saying, "We were a long time in finding a college physician who was more interested in searching for Health than for Disease."

V. Corrections of Remediable HEALTH Defects.

It is generally assumed that the responsibility for correction of remediable defects rests with the student. In the study made, no provisions for the correction of remediable defects were made by 42 per cent of the schools; none except through physical education in 32 per cent; none except what could be done by the college physician in 12 per cent. Two schools were associated with another department so that they had clinical services and one school charged a health fee to cover the corrections which were made outside the school. Such a procedure as the last would seem to be unfair to the student who had paid for his corrections before entering school.

VI. The Tendency to Exclude from Teacher Training Courses or Deny Teacher Training Diploma Until Corrections of Remediable Defects Are Made.

It is obvious that the student health service will fall short of giving its best service in promoting a healthier and more physically fit body of teachers unless some provisions are made to stimulate the student to do all he can to improve his physical condition. That teacher training institutions are solving this problem is shown in this study. Students are excluded from teacher training courses or denied teacher training diplomas until corrections of remediable defects are made in 70 per cent of the schools; in 6 per cent, students are not admitted with defects, so that in 76 per cent of cases students are not allowed to fit themselves for teachers until corrections of remediable defects are made. This tendency is one of the most hopeful signs found in this study.

VII. The Teacher's Health Condition and Attitude a Factor in Her Professional Rating.

If teachers are to be efficient teachers and leaders in health education they must be health minded. That they are health minded will be shown through their training career in their attitude and conduct in regard to scientific health factors. If they are to assume an equal responsibility in the development of physical fitness and health with the mental training on the part of the children intrusted to their care, this factor should be taken into consideration in the training school recommendation for professional positions. The study indicates that 56 per cent of the teacher training institutions make this a basis for recommendation for professional positions.

It is evident that the health condition of the teacher is a most vital factor in his efficiency and service rendered the public schools. This factor then should be shown in his final grades and school records. This is done in only 36 per cent of the cases studied.

VIII. Teacher Training Students Excused from the Regular Courses in Physical Education Because of Physical or Health Disabilities.

Plays and games in the open air have long been recognized as a most important factor in the training and development of children. It is now generally recognized that they have an important educational value aside from their relation to the physical and health development of the child. If the teacher is to be able to use this educational factor, her training in this line must be as sound as her training in English or arithmetic. If she is to understand and be a helpful leader of normal, healthy boys and girls, she must have the spirit of play and be enthusiastically "outdoor minded." Courses in physical education for teacher training students therefore, are of much more significance than for the regular college student.

That teacher training institutions are not wholly cognizant of this fact is shown in this study. Sixty per cent of the schools studied excuse students from the regular courses in physical education because of physical and health disabilities. The percentage of the number excused ranges from 25 per cent to one-half per cent with an average of 4 per cent. There seems to be no more reason for excusing the teacher training student from this work because of her inability to master it, than there would be for excusing her from English, history or mathematics because of her inability to master the subject matter. The hopeful sign is that there is a growing tendency on the part of the schools to refuse excuses for entrance into physical education courses designed for teachers.

IX. Required Courses in Science.

One of the most discouraging things brought out in this study was the dearth of the basic sciences in the training courses for teachers. It is hard to see how a teacher could have a scientific attitude toward health and health education, or toward anything else unless he has some knowledge of the basic sciences. The number of term hours in service required in the elementary training courses studied ranged from two hours to fifty-six hours with an average of 14 term hours. For secondary teacher training courses it ranged from 4 to 48 term hours with an average of sixteen term hours.

X. Organization, Administration and Finance.

The organization and form of administration varies widely. This is attributable to various local conditions and the interest of various preexisting departments in student health work. In some cases, the deans of men and women were interested in securing the help of a nurse or physician in the administration of their work. In others the needs of the physical education department brought about the help and aid of outside physicians. In others, it developed as an extension of the departments of Physiology and Hygiene or Biology; or nutrition work in the department of Home Economics. In other schools a school physician and nurse have been added for the care of student illness leaving the work of formal instruction a responsibility of one or more teaching departments. This has made inevitable a lack of uniformity and coordination of student health activities, resulting in many cases in duplication and inefficiency.

Some schools have attempted to rectify this by forming a committee or board of the various departments interested to control or administer the student health activities. This as a rule has not been satisfactory. As in the history of most organizations administered by boards or committees, soon it is found necessary to select individual directors to carry out the details and to be responsible to the governing head.

Except in the history of their development, student health service in normal schools and teachers colleges is not widely different from that found in universities and colleges. Forsythe in bulletin 11, University of Michigan, Health Service in American Colleges and Universities, 1926, on page 19 says:

"Without attempting to discuss all of the variations in organization to fit local and particular situations, a statement of the policy which seems to be gaining, and to the writer seems most logical, will be discussed. Storey, in directing the work of the Interdepartmental Social Hygiene Board was experienced in student work, and very properly promoted coordination, cooperation, and often combinations of several allied activities. In writ-

ing on this phase of student health work, Storey and Raycroft express the ideas which have guided recent organizations by emphasis upon the necessity of coordination of physical education, instruction in hygiene and the clinical work of medical examination and the care of the sick. Sundwall early expressed the need for a pooling of efforts by a number of college agencies in making the most of student health work.

"Whatever the local conditions, and the established positions or department which might lose identity, the best interest of student health will generally be served by a broad, inclusive, and generally independent organization of the work. The discussion of the problem previously designates three objectives which can be attained best by unified or cooperative administration of the forces which affect the physical welfare, health information and living habits of future citizens. The same unified control can best determine the many things which can be learned from such work."

The value of having at least a portion of the staff identified with student health work on a full-time basis has been generally recognized. The director should devote his entire time to the general problem, and the physician should be on full time, or employed upon a basis which will insure regular, dependable, and interested service.

The professorial status of the head of the first department of physical education and hygiene, established at Amherst 1859, has been generally followed for those in similar work, particularly when instruction is included in his duties. It seems desirable to organize the staff on faculty lines, and regard their work as educational, even though quite confined to clinical care of students.

Our study leads us to believe that these findings of Dr. Forsythe for colleges and universities are even more applicable to normal schools and teachers colleges. First, because of the educational value of health service to prospective teachers and second, because of the usual limited resources and enrollment of normal schools and teachers colleges.

Administration.

Obviously if the student health service is to function, there must be efficient administration of (1) Health Instruction; (2) Personal Service, including medical examinations, care of the sick, and medical and health consultation; (3) Direction of health protecting and health giving conditions in the school society. This includes sanitation, recreational physical activities and community hygiene of the college life. To function effectively over any period of time, these must be administered by one director responsible to the president as the head of any other department.

Financing.

Funds are provided for student health service by:

1. Appropriation from general funds.
2. Student health fees varying from $1.00 to $10.00 per year.
3. Special endowment.

In most schools, there is a combination of the first two plans. Full-time members of the department are paid as all members of the faculty are paid. The health fees are used for dispensary and infirmary supplies and equipment. In some cases the health fees are also used for special service of part-time physicians and nurses.

It seems to be the experience of most schools that a health fee, however small, should be charged. It promotes the student's interest in the service, and takes it from the realm of charity.

Infirmary and Hospital Care.

The value of early hospitalization in student health care is obvious. It is a most important unit in a complete health service program. Not only is it essential from a public health standpoint in order to provide isolation in disease prevention and from a medical standpoint to safeguard the interest of the patient, but it is more essential because of the facilities it offers in health education and training for prospective teachers.

Dr. Forsythe in his study of health service in American colleges and universities, University of Michigan bulletin 11 on page 50 says: "One would hesitate to class the infirmary with the dispensary from a standpoint of importance in the student group, but the service rendered there gives a meaning to the whole work in the minds of many, which enhances the value of the organization. It takes a large amount of work for ambulatory patients to produce the same emotional appeal, to administrative officers and students generally, that comes from the care of bed patients in a properly sympathetic atmosphere of good nursing and infirmary service. The living quarters of many students are questionably suited to their needs when they are well. Certainly it is exceptional that a sick student can remain long in his room and receive suitable attention for himself or for the protection of associates.

"The chances of doing effective preventive medical work in a student group are greatly increased by the possibility of sending a student with an early, undiagnosed illness from the dispensary to an easily accessible room for nursing and observation, away from the often misdirected sympathy of overanxious house mates, whose further exposure to possible contagion is certain. By contact with sympathetic nurses, and in the presence of fellow students where most conditions are not serious, the student's idea that a hospital is a place in which to die is changed to the realization that it is a place to recover health."

Normal schools and teachers colleges are cognizant of this fact. With the exception of some of the city normals whose student body mainly lives at home, and those in close relations with other hospital service, the majority of the schools maintain infirmary service. This ranges from a separate hospital building on the campus, to a section of a dormitory. A few infirmary beds in an isolated section of a dormitory comprise the facilities offered by most schools. Ten beds per thousand students is the average, although it is generally conceded that 14 beds per thousand students is needed. Generally the infirmary is for medical cases only, and free service ranges between three days to two weeks with a charge for longer service.

The service of the college physician in bed cases varies widely in different schools. In a few instances one sick call is made by the physician; in others three; and in a few during the entire confinement of the student. The findings of the committee of the Ohio Student Health Association in its report on Student Health Service for the Colleges of Ohio seem applicable. "The medical director should not attempt to do the work of a specialist or treat long illnesses. The burden of such work should not fall upon the college or be expected by the student. The prime purpose of the health service is to keep students in their classes and teach them the proper attitude toward scientific medicine and health."

To protect the health of the patient and the student body, the medical director must see that each sick student is given the proper medical treatment. This necessitates that at least one sick call be provided, and the school's responsibility does not end until the school physician sees that the student is receiving proper medical care.

Character of Medical and Physical Examinations.

As has been noted in 62 per cent of the cases studied these examinations are made by the college physicians. The character of the examination is perhaps best shown by the blank record forms used. Practically all of these use the form recommended by the American Medical Association for health examination or a slight modification of the form. Many schools supplement this form with others to stimulate the student to correct defects, give him a clearer picture of his physical and health condition, or to give a basis for a health grade.

Rejections from Physical and Health Examination.

As has been shown students are either not allowed to enter with defects or are excluded from teacher training courses or denied teacher training diplomas until corrections of remediable defects are made in 76 per cent of the schools studied. We were unable to find any school with definite, set up criteria for rejection. One reported as its standard, the standard set by reputable

insurance companies for an "A" grade rating. The judgment of the school physician weighing and studying each case as an individual case seems to be the prevailing custom, and this perhaps is as it should be.

The Connecticut State Board of Education set up the following standard of entrance into normal schools.

It is recommended that any one of the following conditions be regarded as sufficient cause for rejecting the application:

a. Incurable defects or disease of:
   1. the blood or blood forming organs
   2. the heart
   3. the lungs
   4. the kidneys
   5. the digestive system
   6. the nervous system, including tic, hysteria, epilepsy, nervous instability, etc.
   7. the skin
   8. the organs of the special senses
   9. the thyroid
   10. the muscular system

b. Myopia of a marked degree
c. Permanently impaired hearing
d. Chronic inflammatory conditions of the nasal mucous membrane accompanied by a disagreeable odor
e. Advanced dental decay, loss of many teeth, and pyorrhœa
f. Abnormalities of the menstrual function which in the opinion of the examining physician would interfere with the performance of duty to the extent of retarding the progress of the school
g. Marked defects of speech

Physical

a. Noticeable and unsightly deformities of the skeleton
b. Wry neck
c. Marked malnutrition
d. Marked obesity
e. Painful flat feet
f. Visible birth marks or unsightly tumor growths of the skin or subcutaneous tissues
g. Permanently stiff or immovable joints
h. Paralysis, atrophy, etc.

It is recommended that when any one or more of the following defects are found, the applicant may be admitted upon the condition that the defects or diseases be corrected or permanently cured within seven months after the opening of school:

Functional disorders of the digestive system
Disease of the skin
Defective vision
Occlusion of the nasal passages
Disease or hypertrophy of the tonsils
Dental decay of moderate degree, gum abscesses, etc.

Strict Standards of Health in Demand.

There is a decided trend on the part of public school systems toward demanding a stricter standard of entrance into normal schools. This is instigated not only by the growing health consciousness but also by the disgust of school administrators with

inefficiency and absences growing out of health disability of teachers. Hart in an Investigation of Sickness Data of Public Elementary School Teachers in London 1914–19 showed that of all absences 88 per cent were caused by 21 per cent of the teachers, and 43 per cent were caused by 3 per cent of the teachers. Dr. Louis I. Dublin in his study of Physical Disability of New York City school teachers 1916, recommended a more selective examination of applicants, and especially stressed neurasthenia as unfitting the teachers for public school work. The complaint of public school officials that a too large per cent of their teachers are physically unfit for teaching from the start is too common. To offset this many of the large city systems require rather rigid physical and health examination of their applicants. Many states require of all applicants for certificates or licenses a certificate of the health condition signed by a physician.

The American Child Health Association, in Health Trends in Secondary Education, an analysis of the health programs of 53 secondary schools, lists among many others the following recommendations for promoting teachers' health and efficiency.

"That selective physical examinations be given to all applicants before employment—this examination to be followed by instructions on how to keep well."

"That probationary health periods be fixed for the correction of remediable defects."

"That provisions be made by educational authorities for health supervision and guidance of teachers with periodic health examinations and advice concerning matters of personal health."

"That records of teachers' absences be kept. That an annual analysis of the absences be made to determine the causes which impair the health of the teachers. That a study based on this analysis be made to discover such new administrative measures as will control physical disabilities."

"That every teacher in training be given a thorough physical examination upon entrance by a competent physician with a 'health positive' attitude. That instruction and training be given in personal hygiene and health education."

"That teachers in service have instruction in content and methods in health education. It is essential that this training be not merely a matter of providing reading lists for teachers but a definite program of instruction and training."

Part 3

Conclusions and Recommendations.

Our study has led us to believe that the most vital link in the chain of public health teaching is quite often neglected. The classroom teacher who is in daily contact with the child is a determining factor in not only the status of health and physical

fitness of the men and women of tomorrow, but a vital factor in the attitude that the next generation of parents will take toward a rational health program. As yet, in many schools with many hundreds of children, she represents the entire health program. In other school systems with an expensive and well organized health program, she holds the key to the efficiency of the health activities. If she is not trained and educated so that she intelligently, sympathetically, and enthusiastically fits into the program of medical inspection and health service, the efficiency of the system must be retarded. The student health department of a teacher training institution, therefore, has a distinctive and responsible service to perform.

Basis of Organization.

The student health service of a normal school or teachers' college should be organized upon the three following assumptions:

1. That educationally it is now generally recognized that health is a fundamental factor in training and preparation for citizenship, since the health of the boy and girl materially determines endurance, disposition and attitude, and endurance, disposition and attitude vitally affect happiness and efficiency.

2. That in the training and preparation for citizenship the school is as much responsible for the preservation and protection of the child's health and the development of his physical efficiency and well-being as it is for the guidance and training of his mental attainments.

3. That an abundance of radiating health and physical well-being is of more importance in the classroom teacher than in an individual in any other profession, since an example in well-being is an incentive of greatest importance in health education, and an unhealthy teacher cannot be in complete sympathy with the attitude and disposition of live, healthy, outdoor minded boys and girls.

Recommendations.

In recommending a set of standards in student health service for teacher training institutions we have kept in mind the three following factors.

1. The great majority of teacher training institutions in which the greater majority of the teachers of the American schools are trained are greatly limited in both finances and enrollment.

2. The present status of student health service in the teacher training institutions.

3. The needs and demands of the service as viewed from modern scientific thought and educational tendencies.

With these factors in mind, we recommend the following standards. They are not ideal, but simple and practical and as

we believe needful; standards that any teacher training institution can meet.

1. That student health service be administered by a director, responsible to the president and on the same status with the heads of other departments and include: (1) Health Instruction; (2) Personal Service, including medical and physical examination, care of the sick, and medical and health consultation; (3) Direction of Health Protecting and Health Giving conditions in the School Society, including sanitation, recreational and corrective physical activities, and the community hygiene of the college life.

2. That the faculty list include at least one full time physician, specially trained for his work and paid from the same budget in the same manner as other members of the staff.

3. That along with the subject matter and general ability entrance tests administered, a complete medical and health examination, administered or supervised by some qualified member of the institution, be required. The detailed findings of this examination should become a part of the student's entrance record.

4. That those students whose physical condition, as judged by this examination, will prevent them from attaining vigorous and positive health shall be excluded from teachers' training courses.

5. That students with correctible or remediable defects either be excluded from entrance or denied full acceptance as candidates for teachers diplomas or certificates until such corrections are made as directed. The same to be determined by subsequent medical and health examinations provided by the institution.

6. That regular clinic hours be provided by the health department for health advice, dispensary treatment and consultation with the student.

7. That since the teacher is to be the guardian and directing force in the care, preservation and development of the children's health, the attitude and conduct of the teacher training student in regard to scientific health factors be considered in recommending graduates for professional positions and that the student's health condition be made a detailed factor in his final grades and records.

8. That since a scientific attitude toward life in general and health in particular cannot be developed without some scientific background, the basic sciences should be included in the general subject matter required in teacher training institutions.

9. That training in health education proper should include:

   1. A subject matter course in personal and community health of at least three semester hours.

   2. A method and subject matter course in Health Education of at least three semester hours.

   3. Observation and practice teaching in a training school

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   2. A method and subject matter course in Health Education of at least three semester hours.

   3. Observation and practice teaching in a training school

or public school system where the teacher will have an opportunity to participate in a progressive classroom health education program.

Respectfully submitted,
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DISCUSSION OF DR. DEWEESE'S REPORT

DR. GRACE S. WIGHTMAN, CHIEF OF DIVISION OF CHILD HYGIENE AND PUBLIC HEALTH NURSING, ILLINOIS STATE DEPARTMENT OF PUBLIC HEALTH

I hesitate to offer any discussion of Dr. DeWeese's excellent report of his study of fifty teacher training schools in thirty-three different states which has been carried on for two years. As a member of the staff of the Division of Child Hygiene I have been observing the health work in the five teacher colleges of Illinois, offering them some help and a little advice. We also have the opportunity of getting impressions from the field—seeing the great need among our teachers for a course in health education as a part of their training. Perhaps we see this side of the problem better than those actually engaged in the normal schools.

Dr. DeWeese first lays stress on the value of a health examination for the student teacher, the consideration of personal and individual health as basic to her health education, her desire for such service to her pupils.

Dr. DeWeese points out cult activities which should deeply interest and concern organized medicine—and which should emphasize the fact that this field is just as fertile for cultivation by the cults as by scientific medicine. From the literature which is gathered by our district supervising nurses we also know that the cults are busy among our teachers, superintendents of schools, and public libraries. If teachers and educators are grounded in some of the basic sciences, if they have had the personal experience of a thorough health examination, had the chance to observe the results of applied medical science in a program of health education, then we have little to fear from cult invaders.

In Illinois our State Medical Society is doing splendid work through its speakers bureau in helping to present the fundamentals of medical science to school groups. Talks have been given be-

fore County Teachers' Institutes, high school assemblies and Parent-Teacher Associations.

Medical consultation and advice in Illinois Teacher Training Colleges remains an unsolved problem. Only two of the schools have the full time service of a physician. One of these schools has a registration of 1200 to 1500 students. Here it seems that the local County Medical Society should be brought into the picture, and I should like to offer the suggestion for the consideration of Dr. DeWeese's committee. The Normal school physician should be an active member of the local medical society, and have an advisory medical committee to consult with her as to her general plans for the student health service, and her special plans for cases of severe illnesses, for epidemics, etc. From this medical society group the college physician should be able to secure lecturers on preventive medicine and assistance and cooperation in the health work of the practice schools. One of our outstanding problems was the apathy and indifference of local physicians toward the correction of remedial defects revealed through the examinations made by a pediatrician from the Division of Child Hygiene. This was perhaps due to the fact that previously the normal school had unfortunately and unknowingly been persuaded to have some work done by a cultist.

We are thoroughly in accord with Dr. DeWeese's recommendations regarding the type, training, and special equipment necessary for physicians doing health work in the teacher training colleges. We believe, too, that through personal health and vitality the physicians should inspire their students to strive for strong healthy bodies. They should themselves radiate a considerable bit of what they preach. Salaries and opportunities for satisfactory, scientific work should be such as to attract healthy, vital up-to-date physicians. Let her be a type of woman who can be in sympathy with the youth she is to influence. She should be a leader, a teacher, heading a department, ranking with the other heads of the school. It should be pointed out that this work belongs strictly to a physician—the only person educated, trained, and legally entitled to assume full responsibility for health service in all its phases.

The weaknesses and defects of the health programs, revealed through Dr. DeWeese's study of fifty schools, exist in varying degrees in the five teacher training colleges of Illinois. In only two schools are full time physicians employed. In one school too much is left to the physical education director, in another to the school nurse, while in a third too much weight is credited to the old type teaching of physiology as a factor in health education. In no school is there a well coordinated, well balanced course in health education which will establish that full interest in the health program—that health mindedness which is needed to make the teacher an inspiration to her pupils.

Yet we are greatly encouraged over our progress in Illinois. Only three years ago the first attempt was made toward unification of the departments concerned in building a real health program. Compared with other states we have reason to believe we have made progress. We feel that sufficient interest is now in evidence to help assure special state appropriations for the health work.

With programs made along the lines indicated in Dr. DeWeese's report and his recommendations, we are certain to arrive at the goal—strict health requirement for entrance—its maintenance throughout the training years—a high standard of personal health as a requirement for graduation—a teacher interested and equipped to carry on in her classroom.

We believe that a State Department of Health has a right to take part in the health education work of teacher training colleges. The Division of Child Hygiene is active in promoting medical, dental, and nursing school work. We are in close touch with the large professional and lay groups of the State. Through an advisory service we believe we can bring experiences of great value to the health teachers of training schools. We have recently placed in the Division of Child Hygiene a supervisor of school health education—a person of extensive education and training who is available to help the teacher colleges in utilizing the varying abilities of the different school staffs to the best advantage and in achieving a well balanced program. Her field experiences with teachers actively engaged in school health work are also brought to the college teaching staff. Coming as she does from outside each faculty group we believe she can do much to prevent one sided programs from developing.

STANDARDIZATION OF SCHOOL MEDICAL INSPECTION

J. BRUCE MCCREARY, M.D., DIRECTOR OF BUREAU OF CHILD HEALTH, PENNSYLVANIA STATE DEPARTMENT OF HEALTH, HARRISBURG, PENNA.

It is difficult to formulate a definite plan for standardization of School Medical Inspection covering a wide field without a thorough and extensive study of conditions prevailing in the territory under consideration.

In the task that is given us, we can but report the organization of a committee to make such a study. A Committee of the American Public Health Association of which Dr. E. L. Bishop, Commissioner of Health of Tennessee, is Chairman, has been pursuing a comprehensive study of rural health practice. The report of this Committee will, no doubt, contain data of value to us.

School Medical Inspection should primarily be applied in three phases—physical examination of pupils, control of communicable disease, and periodic sanitary survey of school buildings. The successful accomplishment of these activities is dependent upon many influencing factors—geographic, industrial, racial. Furthermore, anything like a single standard school inspection is almost impossible in so wide a field as is covered by the American Association of School Physicians.

Public schools naturally divide themselves into two chief classes—rural and urban—and for the convenience of administration, the latter class should be again subdivided into city and town or borough schools.

Representing the State of Pennsylvania, it may be of some interest to you to know something of our organization relative to the subject at hand—SCHOOL MEDICAL INSPECTION.

The public school laws of Pennsylvania, for administrative and supervisory purposes, divide the school districts of the Commonwealth into four classes.

First Class Districts are those cities with a population of 500,000 and upward. Of these we have two, Philadelphia and Pittsburgh.

Second Class Districts are those cities with a population of 30,000 to 500,000. Of these we have 18.

Third Class Districts are those cities, boroughs, or townships with a population of from 5,000 to 30,000. Of these we have 216.

Fourth Class Districts are those boroughs or townships with a population of less than 5,000 each. Of these we have 2,347.

We have a state-wide mandatory School Medical Inspection Law which has been operative since 1911. This statute places the responsibility of school medical inspection upon the State Department of Health.

In the First, Second, and Third Class School Districts, the Bureau of Children has supervisory jurisdiction over the medical inspection service. The inspectors are appointed and their salary is fixed by the local Board of School Directors. Five part-time and one full-time Medical Supervisors keep in touch with the medical inspection service in the 216 Third Class and 18 Second Class School Districts throughout the State, giving suggestions and advice to the local inspectors and reporting the results of their supervision to the central office at Harrisburg.

The standardization of minimum requirements for medical inspection, record forms, annual reports, contracts with inspectors, procedure for the control of communicable diseases, vaccination against smallpox, and routine follow-up work has been successfully established, and we feel that a great step forward has taken place in the last four years.

All of the First and Second Class Districts, and 116 of the Third Class Districts employ school nurses for follow-up work. In the majority of the remaining districts part-time school nursing service is supplied through the agency of local welfare organizations.

Dental Hygienists are employed by local School Boards in 127 school districts mostly of the First, Second, and Third Class.

In Fourth Class School Districts the entire responsibility of school medical inspection is on the Bureau of Children. Medical inspectors are appointed by the State Secretary of Health and paid out of funds appropriated to the department for this purpose. We have in these rural schools alone 780,000 pupils in 22,412 schools or rooms, housed in 11,744 buildings, 8,609 of which are one teacher schools. Four hundred and ten medical inspectors, local practitioners, are employed in the Fourth Class School Districts. These inspectors report the result of their examinations, both physical and sanitary, direct to the State Department of Health. Follow-up returns and notices for the parents of defective children are sent to the teachers from the central office. Duplicate follow-up returns are forwarded to the School Nurse, or Community Nurse, in each Fourth Class School District where such nurse is available for school follow-up work. Such nursing service is available in approximately one-third of the Fourth Class School Districts. In the other Fourth Class Districts, State Health Department Nurses, working out of local clinics, use these duplicate follow-up returns and report to the central office through the State Nursing Bureau.

One hundred and fifty lay health officers throughout the different counties of the State are available at the direction of the central office for follow-up in the correction of unsanitary conditions reported, taking samples for laboratory test of water supplies, etc.

Our total public school enrollment in all districts is approximately 1,800,000, to say nothing of the private and parochial schools. Pennsylvania with her 10,000,000 people and her diversified industries, with more than 900 incorporated municipalities and her rural population, equal to, or exceeding, any other State in the Union, has presented most of the difficulties which are likely to arise in this so-called attempt to standardize school inspection, in the United States and Canada.

The Pennsylvania Department of Health provides a Pupils' Health Record Card, known as Form 92. This Health Record Card is supplied for every pupil in the schools of the Second, Third, and Fourth Class Districts. The School Districts of the First Class, and some of the School Districts of the Second Class have provided their own form of Record Cards. The Health Record, Form 92, contains space for health record for the entire school life of the pupil and forms practically our standard for

medical inspection in the four classes of school districts of the Commonwealth.

Our blanks for annual tabular report, required from First, Second, and Third Class School Districts, are based upon the items that are contained on this health record. It is our thought that the logical plan to arrive at the standardization of forms and records, as well as the standardization of medical inspection practice, is to begin with the record to be kept in the local schoolroom and available to both teacher and school nurse for follow-up work. The value of such a record, properly filed, and permanently kept, can hardly be overestimated. The Record Card should be available for reference ten or even twenty years after the child has left school, for we frequently find in Pennsylvania that a young man or woman writes into the Department for information as to his or her school health record eight or ten years after having left school, in a case where he or she claims remuneration under our compensation laws for the impairment of vision or some other physical defect, and it is necessary to prove that said defect did not exist prior to the date of injury.

It is a difficult problem to educate school principals and teachers, particularly in rural districts, to the importance of permanently preserving these records, but it is gradually being accomplished through the cooperation of the County and District School Superintendents.

We believe that the standardization of such a local school health record and the adoption of this standard by the school health inspection service of all states would be of distinct advantage to the cause of school medical inspection throughout the territory represented by this Association.

The main question to be decided, in our judgment, is to fix upon the different defects of childhood that should be given major emphasis by the Medical Inspector. In Pennsylvania we have been for the past five years instructing our medical inspectors to particularly stress malnutrition, using weight for given age and height largely as a criterion. Another question that should absolutely be given consideration is whether it is essential to continue the same physical examination annually throughout the high school grades. Many medical inspectors feel that medical inspection could easily be omitted during the high school years. We are willing to concur in this opinion, with the exception, however, that a complete physical examination (pupils stripped) be given to all high school pupils who expect to enter into training for the athletic activities of the school, prior to permitting preliminary training for such athletic events.

While we in Pennsylvania still continue to examine all high school pupils, our medical inspectors in First, Second, and Third Class Districts are instructed, and it has been made a clause in

our contract for medical inspectors in Second and Third Class Districts, that such complete physical examination shall be given to the high school pupils expecting to enter the athletic activities.

A complete set of the forms used in the School Division of our Bureau is presented for your consideration. The large number of different forms here presented may seem like useless multiplicity, but it must be remembered that some of these forms are applicable only to districts of the Fourth Class and others are applicable to districts of the Third Class, and that among each, only certain forms are actually used by the Medical Inspector.

WHEN SHOULD WE OPERATE TONSILS

PORTER B. BROCKWAY, M.D., DIRECTOR OF HEALTH SUPERVISION, TOLEDO, OHIO

At the first meeting of the Association of the American School Physicians held at Cincinnati in 1927, criticism was made of the examining physicians in schools who advocated the removal of tonsils on "general principle." It was suggested that this group of physicians should not take the initiative but should rely upon the judgment of the family physician. Further that many tonsillectomies were needlessly recommended by this first group. That such recommendations were made because of the presence of rheumatism, malnutrition, middle ear disease, cardiac, renal and thyroid conditions, chorea and so on when the removal should be made mostly in the presence of a diseased tonsil, the family physician determining the necessity after the school physician suggested the advisability.

It should be remembered that the school physician makes not less than 1000 complete physical examinations a year noting all abnormal conditions present and later correlating them. His notice to the parent or guardian is therefore a recommendation based on the child picture as a whole. The family physician to whom the parent goes for advice acts as the consultant.

It seemed necessary to take issue with the attitude of those raising the criticism.

This paper is a partial reply and is based on a questionnaire sent to more than 100 physicians throughout the United States who in most instances are members of the Oto-Laryngological Societies affiliated with the American Medical Association. In one instance the questionnaire was presented to the members attending a regular meeting of the society, the answers summarized and presented as an individual answer. Sixty-nine answers were received. All who replied showed real interest and a desire to cooperate in reaching a decision on this much mooted question.

To make my impersonal attitude clear I might state that my practice is limited to medicine and that I have never performed a tonsillectomy. I have been in charge of the health work in the public schools of Toledo, Ohio for nineteen years. I believe that the difficulty we have at the present time in finding heart cases for special classes, pupils for our open air schools, and some of our freedom from diphtheria is due to the attitude of our school physicians in recommending the removal of tonsils. During all these years parents have been urged to have their children's tonsils removed so that now we seldom find more than one or two in the seventh or eighth grades who need this surgery. It is true that we have all types of throat surgery but it is seldom that even the worst does not give some relief to the child. Many pupils believe they have had their tonsils removed when it was only a tonsillotomy with unnecessary removal of pillars and uvula. In such cases it is hard to secure personal or family cooperation for a second surgical experience.

Perhaps it would have been more valuable had a second questionnaire been sent to parents of operated children, or to teachers, school directors, and school nurse-teachers and social service workers, that their opinion could have been added to the oto-laryngologists. In this way we might have obtained information relative to changes in personal and home psychology as well as pedagogical progress. Such data would have brought out the fact that the children who were mentally retarded to a pathological degree showed no improvement after tonsillectomy. This group in Toledo shows no impairment of physical health. Generally speaking an operation on the throat will not improve the brain. Yet instances have been cited where a tonsillectomy and adenoidectomy have improved retardation. Likewise instances have been noted where a child in the "Special Class" no longer needed this type of instruction after a tonsillectomy that restored hearing that had been lost. Naturally the brains were there to start with. Thus with the child of good mentality clearing out the adenoid tissue and obstructing tonsil has some effect on normal mentality which would become sluggish otherwise. In Toledo the majority of the children in our special classes have had their tonsils and adenoid tissue removed.

The over zealousness of the school physician seemed to require the opinion of the oto-laryngologists that the criticism might be met. The questionnaire was carefully developed by the laryngologist of the staff of one of the state school health services through answers secured from school physicians in that State and edited by others on this staff, and then submitted to me. The questionnaire was not perfect and was intentionally limited in its scope.

It is as follows together with the answers:

1. Should tonsils be removed in the following cases:
   A. Children in the 1st and 2nd grades who have enlarged tonsils during the winter months? During the summer months they are not enlarged.
      Yes, 50; No, 15.
   B. Small tonsils that exude purulent material?
      Yes, 61; No, 5.
   C. Anæmic children with hypertrophied tonsils, yet that do not exude purulent material?
      Yes, 57; No, 5; No reply, 4.
   D. Children with functional (not organic) heart murmurs?
      Yes, 45; No, 12.
   E. Backward (mentally deficient) children that appear toxic?
      Yes, 58; No, 1.
   F. A hypertrophied tonsil without any purulent discharge with child apparently well?
      Yes, 18; No, 37.
   G. What is earliest age that tonsils should be removed?
      1–18 mo., 10; 2 yrs., 12; 3 yrs., 10; 4 yrs., 2; 5 yrs., 1; 5 yrs., 2; Puberty, 2; Anytime, 24.
2. Will the enucleation of the tonsils safeguard the child against rheumatic fever, chorea and heart disease if these infections are not already present?
   Yes, 33; No, 16; Probably, 20; Probably not, 1; Unknown, 4; Unanswered, 1.
   A. If they are present, will the same operation offer any assurance that recurrence can be prevented?
      Yes, 36; No, 24; Unknown, 3; Some assurance of good, 13.
   B. Should lingual tonsils always be removed?
      Yes, 16; No, 43; Unknown, 3; No reply, 1; Several said yes for lower poles only.
3. Are X-ray treatments worthy of consideration as a treatment of infected tonsils?
   Yes, none; No, 59; 8 "yes" if age or disease prevent anaesthetic; 4 consider it palliative and several stated it made subsequent operation more difficult.
4. In presence of middle ear deafness which does not clear up on treatment, should tonsillectomy and adenoidectomy be recommended as a more or less routine procedure even in the absence of definite tonsil pathology?
   Yes, 55; No, 11.
5. Is there an age period when tonsils seem larger than formerly and then later return to normal size again, there being an absence of any history or findings pointing towards tonsil pathology?
   Yes, 25; No, 16; 12–15, 5; 4–6, 3; At time of dental eruption, 3; 14 did not know and 7 made no reply.
6. How much weight should be placed on the appearance of the anterior pillars (whether injected or not) in deciding condition of tonsils?
   Yes, 41; No, 9; Little, 9; Some, 6; One reported only for adults.
7. Is removal of tonsils to be recommended if they are not badly enlarged or diseased but where there is post-nasal obstruction due to adenoids, removal of which is recommended?
   Yes, 50; No, 14; One "yes" except in very young children; several said operation should be completed with the one anaesthetic.
8. Do enlarged or diseased tonsils sometimes cause enlargement of Thyroid?
   Yes, 44; No, 5; Possibly, 11; Unknown, 7.

9. After tonsillectomy do all cervical glands subside?
   Yes, 13; No, 53.
   A. If not, which ones are prone to remain?
      Yes, 18; No, none; Those not infected from tonsil, 32; Ant. cervical, 11; Post. cervical, 11; Tbc. cervical, 5; Harder ones, 10.
   B. Should another cause for their enlargement be sought or should they be forgotten?
      Yes, 54; No, none; Usually subside, 5; Tbc., 2; Teeth, 5.
10. When a tonsillectomy is followed by the survival of stumps that are follicular is it advisable to request removal?
    Yes, 55; No, none; Possible if symptoms continue, 9; Unknown, 1.
11. Is it ever advisable in a child under twelve to advise removal of apparently normal tonsils in order to eliminate the tonsil in a search for foci or infection?
    Yes, 52; No, 9; No reply, 1; Rarely, 3.
12. Do you feel that you have removed tonsils which did not require surgical intervention?
    Yes, 41; No, 24; Perhaps, 2; Often, 1; Yes, but no regrets, 8; Rarely, 19.
    How often?
    ½ of 1%, 5.

With few exceptions there was full agreement with the idea that too much surgery is not being done. All but two or three questions were practically voted upon unanimously. One was as to the value of X-ray for infected tonsils. Fifty-nine said "no" while four stated it was only a palliative measure, and eight said it should be used when age or some other pathological condition prevents an anaesthetic, while one stated that subsequent operation was made more difficult.

It was evident that ninety per cent of the men believed it wise to remove the tonsils that are large in winter and small in summer or where the crypts of small tonsils contain purulent material; or if the child is anaemic and has large tonsils.

There was a lessening of enthusiasm to operate if the child had functional heart murmurs but even then it was four to one. Even the child with hypertrophied tonsils without purulent discharge and apparently well had non operative friends at two to one.

It was interesting to note that twenty-four of the men would operate without thought as to the age of the patient, being guided by the history and local signs. However, the other 39 expressed an age *preference* as for example:

10 men gave 1–18 months
12 men gave 2 years
10 men gave 3 years
2 men gave 4 years
1 man gave 5 years
2 men gave 6 years
2 men gave puberty

Thus it would seem almost unanimous that it was proper to care for children before the 7th year. These figures are from

the same men who reported their desire to operate children with large tonsils or small tonsils with evidence of pus; or if the child was toxic and showed mental deficiency or anaemia. One third of the physicians would remove large tonsils without any exudate.

Again two to one of those answering this questionnaire felt that tonsil removal would be a definite safeguard against rheumatic fever, heart disease and chorea if these infections were not already present. That of course is another unknown quantity but the majority felt the operation was to be thought of as a preventive against recurrence.

Fifty-five thought that middle ear deafness which did not improve with treatment should be followed by tonsillectomy—eleven said no connection and no hope of aid being secured.

One question was asked "Is there a period when tonsils seem larger than formerly and then later return to normal size there being an absence of any history or findings of tonsil pathology."

Twenty-five said "yes", sixteen said "no" while fourteen did not know, and eight stated at time of dental eruption.

Nearly two-thirds of the men believed that in deciding upon the advisability of operation consideration should be given to the injected appearance of the anterior pillars.

Fifty of the sixty-nine stated that the tonsils even though small and apparently not diseased should be removed if there was post nasal obstruction due to adenoid tissue, the removal of which was recommended.

Nearly all believed that diseased tonsils sometimes cause thyroid enlargement, while 18 either did not desire to express an opinion or frankly did not know.

The influence of tonsil removal on cervical glands was well set forth. Fifty-three said they would not subside while thirteen were more optimistic. There was marked difference of opinion as to the glands that persist. Some reported the anterior cervical remained, some the posterior cervical, some the "tubercular." Ten said the "harder ones." Thirty-two men said the glands *not infected* by the *tonsils* would persist.

Almost every man would seek for another cause if glands persist in their enlarged state. This suggested that the laryngologists would consider other factors besides the throat as a cause of enlarged glands and would refer the matter back to the internist. These same men, 90 per cent of them, desire to remove stumps of follicular tissue that survived tonsillectomy.

Fifty-two men deem it advisable to remove apparently normal tonsils in a child under 12 in order to eliminate the tonsil in search for foci of infection. Nine said "no" and three "rarely".

Then there is the question that strikes home to the real physician. "Do you feel that you have removed tonsils which did not require surgical intervention?" The answers are as follows:

41 said Yes
24 said No
19 said Rarely
2 said Perhaps
1 said Often
8 said Yes, but no regrets

There were several who used the figure of "½ of 1%" as an estimate.

The questionnaire confirmed my attitude that too few tonsils are being removed. Seldom does harm result from tonsillectomy and the size and appearance of a tonsil does not assure the examiner of its innocence as a health threat.

These men replied splendidly and their letters will be cherished for they surely refute the idea that school men are unduly enthusiastic in urging tonsil work. The reports are tactfully scientific. There is a lack of definite statements and not improperly, for as one man wrote the whole question, is one, of "intelligent, careful experienced conscientious diagnosis," and a matter of judgment based on experience."

In this paper I have not delved into biology or pathology nor endeavored to digest the great mass of literature in which reference is made to tonsils. On the contrary, I have endeavored to color my statements with the replies and make definite the idea that an unselfish profession is working to benefit the next generation according to its best knowledge.

Therefore, let the family physician decide what shall be done, but his decision can well be directed by the school examiner who sees hundreds where the home doctor sees one throat. We should get away from the attitude of questioning the school examiner's findings. Permit him to direct and suggest and consult with him for the benefit of the child.

SCHOOL VENTILATION IN CLEVELAND

L. W. CHILDS, M.D., SUPERVISOR OF HEALTH SERVICE, CLEVELAND

In May, 1926, Cleveland's Superintendent of Schools addressed a communication to the Supervisor of Health Service, in which he sought replies to the following two questions:

1. What amount and kind of air is required for schoolhouse ventilation (all factors to be definitely defined and determined)?
2. What kind of ventilation system will produce such air?

Fortunately, the Superintendent did not fix a date for a reply.

The Supervisor of Health Service found that an intelligent reply to the above questions was far from simple, and that the best scientific experts had not determined what conditions should be met by the engineers.

In an effort to arrive at some conclusions regarding these conditions, a committee was named by the Business Department and the Department of Instruction. This Joint Heating and Ventilation Committee found that there was no scientific proof for some of the most fundamental factors involved in the problem of ventilation.

The ventilation engineers of our committee requested the medical men to tell them the kind and quality of air that should be maintained in our schoolrooms, and they would furnish it. The medical men did not know scientifically some of the most fundamental facts which lie at the basis of any intelligent effort to ventilate our school buildings. We did not know, for instance, what temperature should be maintained. We did not know whether a constant or a varying temperature is the more beneficial. Neither did we know scientifically what degree of humidity should be maintained, nor what amount of carbon dioxide in the air is possible before the air becomes detrimental to health.

In this lack of fundamental information for which the engineers have asked and the doctors have failed to supply, it would seem that the doctors have fallen down, and not the engineers.

Owing to the dearth of fundamental facts, our committee turned to experimentation. We had data to show that 50 per cent of the Cleveland teachers absent from school on account of illness were suffering from colds and their sequellae.

Realizing that the incidence of respiratory affections among pupils and teachers presented a major problem, we did decide to make a study of the effects of the two common types of ventilation, viz., the forced draft system, and the open window type, upon the incidence of respiratory diseases and their sequellae among school children.

It was decided to follow the plan previously used by the New York State Commission in similar investigations. It was intended that the information secured should supplement the information that this body had already secured in similar and previous investigations. In order to co-operate more fully with the New York State Commission, their secretary, Mr. Thomas Duffield, was invited to meet with our committee. He subsequently rendered us invaluable aid.

In practically all of the older school buildings in Cleveland, the ventilation is by open window. In the newer buildings situated in the outskirts of the city, the ventilation is by fan. Our first problem was the selection of the school buildings. There was no money available for the modification of the open window rooms. We, therefore, failed to comply with the recommendations of the New York State Commission in the equipment of these rooms with gravity ducts and window deflectors. The buildings included in the study may be described as follows:

Harvard and *Oliver Hazard Perry* have split-steam systems with direct radiation and automatic regulation providing six changes of air per hour in accordance with the Ohio State Code, using two heat inlets into each room on the corridor side, 8 feet above the floor, 2 exhaust outlets at the floor line on the corridor side. No air washers or artificial humiditation are used in any building. (Harvard has 11,970 cubic feet, and Oliver Hazard Perry 8,920 per room, exclusive of cloakrooms.)

Sowinski will be interpreted as having window air supply, gravity vent flue and direct radiators under windows without automatic regulation and without window deflectors in all windows. (Sowinski has a cubic capacity of 11,770 cubic feet per room exclusive of cloakrooms.)

Broadway may be interpreted as having window air supply, but no vent flues with direct radiators under windows, without automatic regulation and without window deflectors. No changes were made in any buildings, nor in the composition of the population of these buildings to bring the various elements of the experiment under more complete control, nor to comply with the ideas of the medical engineering and statistical professions. (Broadway has a cubic capacity of 11,970 cubic feet per room, exclusive of cloakrooms).

The schools were well matched for composition of population as to the following:

Age and Grade
Social and Economic Status
National and Racial Origin.

The regular mental testing program of December, 1927, indicates that the schools which are mechanically ventilated have a somewhat less intelligent population than the schools which were naturally ventilated.

The committee in charge of the study discussed the factor of intelligence and decided to neglect it entirely as of no particular consequence. Since the results are favorable to the more intelligent group as well as to the naturally ventilated schools, it may be well to make note of the fact here.

The study was made in February and March, 1928 using the forms and following in the main "The Methods of Analysis" described by Thomas J. Duffield in The American School Board Journal, 1928, on page 57.

The method of determining the incidence of respiratory disease was made uniform throughout by the careful supervision of the Health Service Department of the Board of Education and the cooperation under the direction of this department of teachers, supervising nurses, and attendance officers. It was found convenient in the operation of this experiment to consider Sowinski open window building and Oliver Hazard Perry fan building as

Group I; Broadway open window and Harvard fan building as Group II.

Two nurses devoted their entire time in instructing the teachers and investigating the cases present with respiratory diseases. The nurses in turn were instructed and supervised by the Supervisor of Health Service. One nurse was assigned to Group I, the second nurse to Group II, alternating at the end of each week. Difficulty was experienced by both teachers and nurses in detecting slight colds. They were instructed, however, to report or to record no pupils present with a cold who did not have well-marked symptoms, such as conjunctivitis, reddened throat, discharging nose, and voice symptoms, possibly coupled by coughing and sneezing. In other words, children with doubtful symptoms were not asked to hold up their hands and acknowledge the fact that they did or did not have colds, but regularly filed in front of the teacher instructed by the nurse, who closely observed the cases.

Doubtful cases were reexamined by the nurse. Teachers and nurses had one thought in mind, and that was to arrive at an analysis of the truth. Field visitors, middle-aged women from the Attendance Department were given the same instructions as the nurses and in accordance with these instructions, they daily determined and reported the causes of absences when they had visited the homes. They alternated their groups at the end of each two weeks so one visitor would not remain longer than two weeks in one group of schools.

SUMMARY OF DATA

	Sowinski and Broadway Natural Ventilation	*Harvard and O. H. Perry Fan Ventilation*
1. Period of study....	Feb. 6 to Mar. 23, 1928	Feb. 6 to Mar. 23, 1928
2. Total number of pupil sessions	72,025	60,392
3. Pupils present and absent with respiratory diseases expressed in sessions	4649	7890
4. Percentage	6.5	13.1

At a glance it will be seen that respiratory ailments among pupils present and absent were twice as frequent in the fan ventilated rooms when compared with the rooms with natural ventilation.

In comparing the two types of ventilation in reference to pupils absent with respiratory diseases, the difference found is insignificant. The same is true for total absences for all causes (See Table II). The four schools studied represented highly mixed race stocks, although they were well-matched for composition of population (See Table I). In mixed race stocks, absenteeism

is likely to be due to causes other than illness, particularly truancy is likely to be greater.

In the Cleveland schools, a monthly bulletin of school attendance is issued by the Superintendent's office. The school with the best daily attendance is first upon the list. Principals in their zeal for a good attendance discourage absenteeism on account of colds, unless they are of a serious nature. Moreover, the practice of absenting children from attendance in schools because of colds varies greatly in different localities. Some of the intelligent parents are in the habit of giving their children bed rest during the first day or two of an attack of acute coryza. Other parents pay no attention whatever to a cold and completely ignore its presence in sending their children to school. Upon the other hand, children present with a respiratory disease in school can be readily detected by teachers, nurses, and doctors.

The chief of the Bureau of Reference and Research of the Cleveland Public Schools in his statistical treatment of the collected data endeavored to eliminate the element of chance in comparing the types of ventilation in their influence upon health.

This chance element was seized upon by the conservative members of our committee as offering the possible explanation of the results of the experiment.

In order to reduce to a minimum this accidental element, differences between schools and groups of schools in illogical combinations and arrangements were tabulated (See Table IV, Parts I, II, and III).

As an additional check, each building included in the Cleveland study was pitted against every other building regardless of the type of ventilation. The difference found between Harvard and Oliver Hazard Perry combined (mechanically ventilated) on the one hand, and Sowinski and Broadway combined (naturally ventilated) on the other was more than twice the difference found between Sowinski and Oliver Hazard Perry combined, and Harvard and Broadway combined. No difference between schools or groups of schools compared accidentally or illogically was as great as the smallest difference between schools logically compared.

In all probability, then, the differences found are not due to mere chance, but represent real differences, reasonably certain to be due to differences in the ventilation of the buildings.

It has been stated that for the purposes of our experiment, the only rooms available as open window rooms were in schools of an old type. The cubic capacity of these rooms is somewhat greater than rooms in modern school buildings. Thus, Broadway's rooms had a cubic capacity of 11,970 cubic feet each, exclusive of cloakrooms; Sowinski, 11,770; Harvard, 10,690; Oliver Hazard Perry, 8,920. Broadway furnished 298 cubic feet per

pupil; Sowinski, 294; Harvard, 267; Oliver Hazard Perry, 223.

Now, the incidence of colds in these rooms proved to be in an inverse ratio to the number of cubic feet per pupil; thus, Oliver Hazard Perry furnishing the smallest number of cubic feet per pupil showed 17 per cent of colds; Harvard with 267 cubic feet showed 10.4 per cent; Sowinski with 294 showed 7.7 per cent; Broadway with 299 showed only 5.4 per cent.

It will be seen that the rooms with the greatest air capacity per pupil made the most favorable showing. On the other hand, there was a distinct correlation between the amount of air change and the number of colds. The most modern fan building, Oliver Hazard Perry, with the greatest air changes (6 changes per hour) showed the greatest incidence of respiratory diseases. Harvard with a less modern ventilation equipment and presumably with an air change of somewhat less than 6 per hour, was next in order of respiratory diseases. Sowinski, a school with insufficient air ducts near the floor, and with a considerable less air change was next in order, while Broadway, with no exhaust ducts, and with but a feeble air change, showed the fewest number of colds.

Dry bulb thermometers were used in all schoolrooms under observation. The temperature was taken by monitors (pupils appointed by the teacher for this purpose), whose duty it was to read at intervals, the thermometer suspended from the ceiling, in the center of each schoolroom, to a point just above the heads of the children. These monitors read the temperature at stated intervals and recorded it. When a room in the open window classrooms was found to be overheated, the monitors threw open the windows until the temperature had dropped to normal or below. In the fan ventilated buildings, the custodian was notified concerning an overheated room. It will be seen that in the mechanically ventilated classrooms, the temperatures were fairly steady, while in the open window classrooms, the temperatures were quite variable. This particularly was the case in the Broadway school, the school that showed the best results and the school that has been noted for a variable classroom temperature.

It is generally conceded that the humidity of the fan ventilated classrooms was lower than the open window classrooms. This is generally true of all fan ventilated school buildings in the city of Cleveland in which a humidifier has not been installed. The results of the experiment show a greater prevalence of colds in classrooms with the lowest humidity. Warm dry air fanned into a schoolroom seems to abstract the moisture from the mucous membrane of the inmates of the room. The nasal cucosa contains normally a secretion which is protective in function and if this secretion is removed through a dessicating process, the mucous membrane is rendered more susceptible to pathogenic bacteria. This may be the reason of the greater prevalence of

respiratory affections in schoolrooms with a relatively low humidity and with a considerable change of air.

Our experiment was too limited in time and scope to permit us to draw conclusions that will go unchallenged. The purpose of our work was to supplement similar work carried out in other sections of the country. However, the results of the experiment seem to warrant me in making the following assertions:

1. When compared with open window ventilated classrooms, there were twice as many colds in fan ventilated rooms.
2. This difference was real and was not due to chance.
3. The more healthful classrooms had a greater room capacity, a variable temperature, a greater moisture content, and a slower air movement.
4. Dry air in rapid motion deprives exposed mucous membranes of a normal protective secretion, thus rendering them more susceptible to bacterial invasions.

Mechanical ventilation like prohibition has come to stay. Neither of them came direct from Heaven, although both have received the sanction of law. In the wake of mechanical ventilation with its 10 cubic feet per minute per child has come the smaller schoolroom situated in a structure fair to look upon.

In effect the modern school pupil is allowed to dessicate and to go to sleep in the dilated portion of a vast tube under the hypnotic influence of an abundance of warm dry air blown through the tube at an unvarying temperature.

In both systems, bootlegging is common; in the one of fresh air through open windows, and in the other of intoxicants.

One of these systems at least I would modify.

When a teacher is faint and is seeking a stimulant in the way of fresh air, I would grant her enough personal liberty to open the window to secure it without the ever imminent possibility of disrupting the balance of the entire system, and a verbal conflict with the strong arm of school law—the Custodian.

The creation of a mechanical system which permits the unrestricted opening of windows is a consummation devoutly to be wished for.

AFTERNOON SESSION
2:00 o'clock

ROOM 430A STEVENS HOTEL

A MODEL SCHOOL MEDICAL INSPECTION PROGRAM IN A FIRST CLASS CITY

JOHN A. CECONI, M.D., DIRECTOR, DEPARTMENT OF SCHOOL HYGIENE, BOSTON PUBLIC SCHOOLS

In presenting the subject assigned to me, "A Model School Medical Inspection Program in a First Class City," I do not know how I could do better than to speak of that of which I know best: the system we have in Boston.

The law of Massachusetts, as of many other states, provides that there shall be school physicians and school nurses, that there shall be school medical inspections, physical examinations of school children, etc. In Massachusetts it is provided that this work must be done by those whose training specially qualifies them, namely, school physicians and school nurses. The writer places great emphasis on this last provision because there are newer styles in physical examinations in some cities, in which physical examinations, examinations of the skin, examinations for goitre, are made by others than physicians. In some places they are going so far as to advocate the use of the stethescope by teachers.

The public and private health agencies of Boston, in so far as is humanly possible have decreed that no child shall be born who is not well born, and that no child shall reach the public schools susceptible to those ills to which children are peculiarly heirs, without active immunization having been provided for and attained—and that no child shall appear for matriculation in school without every effort having been made to secure for him the maximum state of good health, good nutrition, and mental receptivity. This is the scope function, and slogan of the public and private health agencies of Boston—their tribute and gift to the children of pre-school age. The writer would be remiss in his duty if he did not pledge to these public and private health agencies a full dripping measure of support and co-operation.

It is a matter of record that through the courtesy of the School Committee of Boston it was made possible in 1923 and 1924 for an official of the Boston Health Department (the present Director of School Hygiene of the Boston Public Schools) to conduct a diphtheria prevention campaign in the Boston Public Schools. In less than forty days nearly 60,000 children were Schick tested, and over 25,000 were immunized. This was in connection with the Boston Health Department's diphtheria prevention campaign when over 120,000 children were Schick tested, and nearly 50,000

immunized with toxin-antitoxin. It might be well in passing to state that this work was begun late in 1923, and I earnestly beg your attention to the following facts in reference to the diphtheria incidence from 1923 to January 1, 1927.

In 1923 there were 3,276 cases with 176 deaths;
In 1924 there were 2,528 cases with 168 deaths;
In 1925 there were 1,256 cases with 98 deaths;
In 1926 there were 982 cases with 54 deaths.

When one realizes that there are at all times approximately 100,000 children of pre-school age in Boston, the necessity of the accomplishment of this immunization work in this group will be readily appreciated. The Department of School Hygiene stretches out its arms for the thousands of these protected children and pledges a united effort to maintain and conserve their health.

The duties of the school physicians were regarded in 1915 of such a special character that by unanimous vote of the School Committee and with the full consent and desire of the Boston Health Department, school medical inspection service terminated under the jurisdiction of the municipal health authorities and was placed under the Department of Education—the Boston public schools.

When the present Director of School Hygiene took office on May 11, 1925, the school hygiene staff comprised the following: fifty-three school physicians, one school physician assigned to the Certificating Office, one Supervising Nurse, fifty school nurses, and one school nurse assigned to the Certificating Office.

At this time, then, an intensive study was made of the organization plan of the department then in practice and shortly after the Director offered the following communication to the Boston School Committee through the Superintendent:

From: The Director of School Hygiene,
To: The Boston School Committee and Superintendent of Public Schools.
Subject: Plan of Reorganization of the Department of Medical Inspection.

It is, of course, incumbent upon me as the new Director of the Department of Medical Inspection to devise a plan and formulate a program to the end that this Department shall function at the highest efficiency compatible with its budget.

The ideal organization probably will never be attained, but the practical one with some modifications is to be found in several places. One does not have to look farther than the organization of the executive system that now obtains in the School Department of the City of Boston to find a ready answer to our own problem.

As I understand it, this organization consists of a chief executive (the Superintendent), who determines in a large measure the scope of the work and the policies of the Department under his able leadership. Closely associated with him in an advisory capacity is a body of capable assistant superintendents who are active field workers in districts of the City allotted to each and who function as advisers in special matters of departmental detail assigned to each.

The principals of schools are responsible to these assistant superintendents and the teachers likewise are responsible to the principals—always the matter of responsibility is fixed—always the perfection of organization is striven for. Furthermore, above and beyond all these is the supreme advisory and judicial body—the School Committee.

Now, then, it is the intention of the Director of the Department of Medical Inspection to secure at once an Advisory Council composed of men preeminently fitted by training and experience to best advise in matters pertaining to the Department. It has seemed to the Director that such a council should contain an acknowledged expert in public health, and an acknowledged expert in preventable diseases, an expert in internal medicine, an expert in the science of applied biology, a pedagogical expert in health education, an expert on the vast problem of tuberculosis, and an expert on the highly important matter of postural defects. Of course, it is understood that this will be an active rather than a dormant body.

Carrying on the analogy, the chief of this Department is the writer of this document and may be passed over as one who much prefers to be judged by his record of accomplishments rather than by mere words or promises.

This brings us then to the consideration of a board similar to your assistant superintendents—to the necessity of the appointment of a corps of assistants who will function as liaison officers between the active workers in the field and the departmental executive—men of such ability as will be able to organize and maintain each district functioning as a complete unit—men of such activity as to enable them to keep in close personal touch with all the physical problems the unit offers—men of such personal magnetism as to be able to secure the fullest measure of co-operation from those school physicians who must be responsible to them—men of such tact and diplomacy as will be able to settle promptly and efficiently the hundreds of moot questions that must and do arise in the course of routine school hygiene activities.

It may be said that what has been offered regarding the qualifications of these men has to do with disease and defects only, but in view of the recent rapid advances in health education these men should possess both the ability and the knowledge to teach health problems and to provide scopes for the same to school physicians and to school nurses, and what may seem more desirable, to teachers themselves. In addition, they should have a working knowledge of accident prevention, of nutrition problems—a complete knowledge of both the theory and practice of preventive medical work and the ability to organize for its efficient operation.

Furthermore, these district supervising officers should have a thorough understanding of the absolute desirability of linking up the home with the school environment and an appreciation of the most practical manner of bringing this about. It will be imperative for them to know the difference and to make the distinction in the mere mass of statistics as they refer to defects found and the correction of the same.

In this connection, may the writer allude to what has recently come into being and is now functioning in cities and towns in close proximity to Boston—what is known as the Ten Year Underweight Program. This plan, the conception of which is entirely the product of Massachusetts brains, now operating to the best of my knowledge in this State alone, has as its basis the most lofty purpose and the broadest scope—for the public health of the Commonwealth—of any similar program that has come to my attention. It seeks for nothing less than the elimination of Tuberculosis in the coming generation. The means by which this end may be attained implies of necessity work among school children, and that this work be integrated as a vital part of school health work.

Any attempt to pursue to full effectiveness health conservation and health preservation would be doomed in my opinion to signal failure if some provision were not made for the admission and adoption of this most salutory and beneficent measure for the safeguarding of children's lives. That an intimate knowledge of this subject on the part of the school physicians is desirable would be a mere platitude; it is not only desirable but it is absolutely essential.

Again, the Director is quite sure that you are all more or less familiar with the recent introduction and correlation of Health Education into the curricula of teachers' colleges. That some provision will be made in the Boston public schools in the not very distant future seems to the Director to be within the bounds of reasonable expectation. In such an event, the writer feels very confident that his Advisory Council and his Supervising School Physicians will serve in a very useful capacity to those whose pedagogical duties shall require the determination of these courses.

Now, in conclusion, Mr. Superintendent and Members of the Boston School Committee, may the Director of Medical Inspection be permitted to say that he is fully cognizant of your sympathy and good wishes in this matter, and that he realizes your thorough appreciation of the part education must play in the health of the Nation. Your knowledge that the child committed to our care has the right to look to us not only for the correction of defects but for the conservation of health to the end that his vital capacity may be so maintained as to enable him to take from the schools all that the schools have to give and that your teaching staff may function to the point of maximum efficiency is conceded. What is not so widely understood, however, is the fact that health is purchasable and that in this world one generally receives only that for which one pays. Salary increases are contemplated and expected.

For the rest, you must accept my assurance that the personnel as a whole will earn its salary and I expect, as usually happens, some members of it will earn more.

JOHN A. CECONI, M.D.,
Director of Medical Inspection.

The Board of Superintendents approved this reorganization plan and the School Committee voted for its adoption. Arrangements were then made with the Civil Service Commission for a competitive examination by that Board for the six positions as Supervising School Physicians. This examination was confined to the personnel of the department as it was the unanimous opinion that these positions should be considered as promotions within the department. Early in the fall the examination was held and six supervising school physicians were appointed. The city was divided into six districts and each supervising school physician was given his respective district.

These supervising school physicians are directly responsible to the Director of School Hygiene for the work in their districts to which they are assigned and by the employees under their immediate jurisdiction. They are required to conduct their work in harmony and to consult at regular intervals with the Director on all matters pertaining to the work and relative to the circumstances connected with it. They are responsible for the technical

and teaching phases of school physicians, explaining all instructions, preventing misinterpretation of orders, correcting errors, giving personal attention, assistance, and encouragement to all under their jurisdiction, with the purpose of creating an esprit de corps by tactful and comprehensive dealings with all whom they come in contact. These supervising school physicians confer with the principals of each school district as occasion demands. They explain to the principals of each district the essential features of school hygiene service. These men possess by experience and training such knowledge of communicable diseases and epidemiology as will enable them to devise and maintain endemic indices in their districts, and they are capable of determining instantly the situation as to frank cases, contacts, carriers, susceptibles, immunes, and releases. In other words, they possess a comprehensive and intimate knowledge of contagious diseases sufficient to compilate and maintain these endemic indices.

In addition, they are men who possess the ability and the knowledge to teach health problems, not only to school physicians and nurses, but to teachers. I have no hesitancy in saying that the present corps of supervising school physicians is composed of men who are not only interested in but have also studied and tested the most recent pedagogical advances in health education. So, after all, our chief aspiration is the most complete unification possible between medical and educational forces—this is health education which is the slogan of modern preventive medicine.

So it is evident from the work accomplished by the corps of school physicians with the additional impetus given by the supervising school physicians, that the department of school hygiene of the Boston public schools has a personnel which not only possesses a knowledge of public health, school hygiene, and health conservation, but has the ability, likewise, to impart this knowledge to others to the end that they in turn may be of greater assistance in the establishment of this correlation in the integration of such constructive curricula in the Teachers College in the years that are to come.

The Director of School Hygiene next recommended to the School Committee the advisability of change of designation of "Medical Inspection of Schools" as it is a fact that medical inspection is a misnomer in the newly arranged program of the Boston public schools. Early in the fall of 1925, by vote of the School Committee, the Department of Medical Inspection was changed to the Department of School Hygiene.

Shortly after this, the Director of School Hygiene, with the approval of the School Committee appointed his Advisory Council. The members of the present council are as follows:

Dr. Milton B. Rosneau	Charles Wilder Professor of Preventive Medicine and Hygiene, Harvard School of Public Health.
Dr. Clair E. Turner	Associate Professor, Department of Public Health and Biology, Massachusetts Institute of Technology.
Dr. Robert B. Osgood	John B. and Buckminster Brown Professor of Orthopedic Surgery, Harvard Medical School.
Dr. Timothy J. Leary	Professor of Pathology and Bacteriology, Tufts College Medical and Dental Schools.
Dr. Edwin H. Place	Professor of Clinical Pediatrics, Harvard Medical School; Physician-in-Chief, Contagious Department, Boston City Hospital.
Dr. Murray P. Horwood	Assistant Professor of Public Health, Massachusetts Institute of Technology.
Dr. John B. Hawes, 2nd	President, Boston Tuberculosis Association.
Dr. Cadis Phipps	Associate Professor of Clinical Medicine, Tufts College Medical School.
Dr. Henry M. Pollock	Superintendent, Massachusetts Homeopathic Hospital; Associate Commissioner of Mental Diseases, Commonwealth of Massachusetts.
Dr. John A. Foley	Assistant Professor of Clinical Medicine, Boston University.

At all times the President of the Massachusetts Medical Society is a member of this council, and in addition to these gentlemen the Director of School Hygiene has appointed two members ex-officio—the Health Commissioner of the Commonwealth of Massachusetts, and the Health Commissioner of the City of Boston.

A very good question at this time is: "What is being done in schools now?" The question is fair and deserves recognition, and in order to conserve as much valuable time as possible the writer herewith presents a summary of the activities of medical inspection in the public schools since his induction into the office of Director of School Hygiene.

The Department of School Hygiene of Boston now comprises one director, six supervising school physicians, one physician assigned to the Certificating Office, one school physician assigned to otological duties, one school physician assigned to ophthalmological duties, one medical supervisor of nutrition classes, fifty-six school physicians, one supervising nurse, three assistant supervising nurses, one school nurse assigned to the Certificating Office, fifty-seven school nurses, and one sanitary inspector.

Women school physicians have been assigned to Teachers College, high schools attended exclusively by girls, and to the Trade School for Girls. There are at present four women school physicians on the school hygiene staff.

The Department supervises, promotes, and conserves the health of pupils and teachers by means of an extensive and intensive

health education program, and stresses preventive rather than curative measures. It is also the jurisdictive body in sanitation of school buildings.

The Commonwealth of Massachusetts demands an annual physical examination of every school pupil. Boston is unique in living up to this mandate. Nearly 130,000 pupils are examined each year. The defects detected are referred to parents and family physicians and dentists for correction. Hospital facilities are available for all those unable to procure private treatment. During the last school year, due to the efforts of the school nurses, family physicians and hospital clinics, over 55,000 physical and dental defects were treated or corrected. Boston may well be proud of the support of family physicians and dentists and of the clinical facilities afforded for this work.

A yearly average shows over 200,000 inspections by school physicians and school nurses.

During the school year 1926–27 there were about 127,000 physical examinations made. Over 105,000 of these were in the elementary and intermediate schools. Of this number (105,000), there were 21,858 physical and 35,359 dental defects found in 47,943 defective children.

All of this work is directed by the Director of School Hygiene and the Supervising Nurse under the immediate supervision of the field workers, namely, the supervising school physicians and the assistant supervising nurses.

The Boston public schools should be congratulated on having only 47,943 children with physical and dental defects detected as a result of the annual physical examinations. At first it might appear that the percentage is rather small so it is felt necessary to state that about 85 per cent of this group of 105,000 children examined in 1926–27 have been in our schools for from one to nine years, or an average of about four and one-half years and the opportunity for the detection and the correction of their defects would be presented and accomplished during their early school years so that the upper grade children in our schools are reasonably free from physical and dental defects.

Six thousand eight hundred physical defects were corrected at clinics and 5,000 physical defects were corrected by private physicians.

Dental defects of 16,864 pupils were corrected at clinics and 17,650 pupils by private dentists.

This makes a total of over 23,000 treatments of dental and physical defects by clinics, and nearly 23,000 treatments of dental and physical defects by private physicians and private dentists.

Signed certificates from dentists and institutions are given to each child when dental work is completed.

In addition to this number of dental cases, there were nearly 7,000 children treated by private dentists and approximately 7,000 treated at clinics whose dental work was not completed at the close of school in June 1927. This makes a total of nearly 14,000 unfinished dental cases.

What does this mean? Just this—that 50 per cent of the physical and dental defects of our public school children are placed under the supervision, care, and treatment of family physicians and dentists, and why—because the Department of School Hygiene has referred these cases to these family physicians and family dentists.

It can readily be seen then, that it is not the policy of the Department of School Hygiene of Boston to advocate or patronize state medicine and here and now it is unequivocally stated that we are greatly indebted to the practicing physicians and dentists and we recognize them as the proper individuals who should be responsible for the treatment and correction of defects found. The writer takes this opportunity to state that the family physicians and dentists of the pupils of the Boston public schools appreciate the helpfulness of our Department. There are indeed, many instances on file in the department office where these physicians and dentists have acknowledged our most ethical co-operation. After all, it is impossible for any school health department or any other health agency or agencies to function properly without the unanimous support and cooperation of the family dentist and physician.

Criticisms have been made of the so-called "slip-shod" manner of physical examinations in various school systems. In other words, they were construed as a "good morning, how-do-you-do, and a good-bye" proposition. The writer, feeling that there were some grounds for this criticism, has restricted the number of physical examinations per hour in the Boston public schools. We are making physical examinations at the rate of about 15 pupils per hour rather than 150 to 180 per hour as obtains in some school systems. The Director is greatly pleased with his corps of school physicians and the type of work they do and has never heard one objection from this corps since the exaction of more of their time in the performance of these physical examinations.

The detection of physical defects is important, but correction of these defects is most important. The correction of these defects in our opinion depends greatly upon the interest taken by the parents. For the past two years we have invited to the physical examinations the parents and guardians of the children, and it has been shown that by their presence they not only show their keen interest in the methods of examination but become imbued with a great desire to have the physical defects, as pointed out by the school physicians, corrected. It has been demonstrated con-

clusively to the satisfaction of the Department of School Hygiene and to school officials that the presence of the parents at these examinations has been one of the most progressive steps in the history of school hygiene work, not only from the standpoint of having defects corrected but from that of health education. The Director of School Hygiene is convinced that the enthusiasm aroused among the parents as a result of this departure is a material factor in the correction of physical handicaps.

It has been thought that there might be a duplication of effort in the public health nursing service in Boston. The results of surveys made by Dr. Murray P. Horwood, Assistant Professor of Health Education at Massachusetts Institute of Technology, by Dr. Haven Emerson, Professor of Public Health, Columbia University, and by Dr. C. E. A. Winslow, Professor of Public Health at Yale University, have proved definitely that there is no duplication so far as the school nurses are concerned. The school nurses have access to the homes of every school child and while their interest is centered in the child of school age, of course, this interest per se should not and does not militate against co-operation with all other health agencies. As a matter of fact it encourages cooperation and this cooperation tends to nothing more or less than correlative health work which is now conceded to be the aim of all public health officials.

In connection with the reorganization of the Department of School Hygiene a successful survey of the vaccination status of our school population was made early in September 1925. The entire school population of 130,000 children was inspected, and the surprising discovery was that in our public schools we had over 5,000 unvaccinated children. In passing it might be well to state that at the close of the school year in June 1926, nearly all this number were successfully vaccinated or had produced certificates of immunity or of physical unfitness. This has developed into an annual procedure and is one of the contributions of the Department of School Hygiene in its endeavor to sustain the reputation of Massachusetts to continue to be a smallpox free state.

Tuberculosis has been a menace to every community and it has been felt for years that this disease in a great many instances, although considered a communicable disease, is, in reality, preventable. So Massachusetts health authorities, tuberculosis experts and others interested in the conservation of health and life determined on a policy which had for its end the elimination, so far as possible from the community, of the so-called "white plague." The Massachusetts Department of Public Health conceived the so-called Ten Year Underweight Program alluded to in this paper and it was introduced into the Boston public schools and special physical examinations of children have been made

throughout the entire city. Preliminary to these special physical examinations by the specialists of the Massachusetts Department of Public Health, the entire elementary and intermediate school population (exclusive of kindergartens) was weighed and measured. The number of pupils thus weighed and measured was approximately 94,000. Of this number a selected group which consisted of children who were ten per cent or more underweight, also all children who were tuberculosis contacts, or children who were habitually absent on account of colds or other reasons were grouped and given the special examination by the State experts. This examination consisted of auscultation, percussion, and the tuberculin test. Reactors to the tuberculin test were given intensive X-ray examination by the State experts in the school buildings.

Of the 94,000 children weighed and measured 9,150 children were examined with the following results:

Number of cases of malnutrition	1,240
Number of cases of pulmonary tuberculosis	7
Number of cases of hilum tuberculosis	173
Number of cases of latent hilum tuberculosis	45
Number classified as suspects	456
Number X-rayed and classified as negative	1,423

Invitations were extended to the parents and guardians of the children to be present at the examinations. Approximately 75 per cent of the parents accepted this invitation, and every parent who attended the examination of his or her child not only gave consent for the examination but his undivided support. This was indeed a wonderful manifestation of the interest and cooperation of the parents and guardians of our school children. I earnestly believe that the attendance of the parents at these examinations is definite evidence to show the eagerness on the part of the home to work with the school in new departures in health education. Out of the total number of children found to be underweight, 90 per cent of the parents gave written consent for the examination.

Just a word concerning the type of examination and the type of individuals performing the examinations. The chance of embarrassment from an examination such as this was most carefully guarded against. No child was examined without the nurse and, in 75 per cent of the cases, in the presence of the parent. No child was exhibited and each child was covered with a special cape for the occasion.

These examinations were conducted by a skilled group of tuberculosis experts selected by the Massachusetts Department of Public Health.

It is estimated by the Massachusetts Department of Public

Health that approximately $100,000.00 have been expended by that department for these examinations of the children in the Boston public schools. This is a startling figure and it is brought out here for two reasons: First, that health authorities and officials are one in their belief that health is purchasable, and secondly, that the conduct of this valuable program in the Boston public schools was absolutely without expense either to the city or to the pupils.

After all, what the Department of School Hygiene is advocating and doing is nothing more or less than an endeavor to pay a debt to the school child, the giving to him the best possible chance for a long and useful life. To do this we cannot allow him to go blindly on his way trusting to luck that he will escape the common pitfalls. He has to be helped and the least we can do for him is to see that his physical and mental armamentarium is such that when he leaves our educational jurisdiction he will be a credit physically, mentally, and morally to his Alma Mater—the Boston public schools.

It might be well to state that during each of the summers of 1926 and 1927, as a result of the findings of the pulmonary experts of the Massachusetts Department of Public Health in these underweight examinations, the Department of School Hygiene of Boston was able to place in the Salvation Army Fresh Air Camp at Sharon, Mass., about 300 of these children for whom under ordinary circumstances no vacation would be available. The average gain in weight in each child at this camp was about 7 to 10 pounds. The Federated Jewish Charities provided excellent camps for their children who came in this group—approximately 250 children each summer. The various settlement houses and social agencies throughout Boston provided vacations for an additional 200 children of this group. The heartfelt gratitude of the Department of School Hygiene goes out to these agencies for the wonderful cooperative spirit shown in helping us conserve the health of these children.

From the Ten Year Underweight Program it was sharply drawn to the attention of the writer that rest and proper nutrition of the child were paramount issues in defeating the inroads of tuberculosis and a nutrition specialist was appointed who has made a study of the nutrition requisites for the correction and prevention of malnutrition.

The open-air classes were first visited and conferences held with the masters, teachers, school nurses, and school physicians. The purpose of this open-air class survey was to determine the adequacy of these classes for the care of the malnourished and pre-tuberculous children. The types of programs conducted and the needs of the locality were considered. It was found that the old type open-air classes were not suited to care for the needs of

these children because of the fact principally that the personnel of these classes was restricted to children of not more than two grades.

The children requiring the nutritional supervision came from all grades from the first to the eighth. Rest and nutrition classes, therefore, were established to care for the needs of the pupils and to give the needed nutritional care with a minimum loss in educational activity. Sixteen of these classes are now being conducted, caring for about 350 children. Twelve of these classes are carrying on a full-time program and 4 a part-time program. Preparations are now being made in four additional districts for the establishment of this work.

The full-time program is as follows:

9:00 to 10:00 A. M.	regular class
10:00 to 10:30 A. M.	rest on cots
10:30 to 10:40 A. M.	mid-morning luncheon
10:40 to 10:50 A. M.	recess
10:50 to 11:45 A. M.	regular class
11:45 A. M. to 12:45 P. M.	rest on cots
12:45 P. M. to 1:10 P. M.	dinner
1:10 P. M. to 1:25 P. M.	recess
1:25 P. M. to 3:30 P. M.	regular class

In the part-time program the noon-day rest and the dinner are omitted.

The rest periods in the morning are scheduled at a time when a minor subject is taught and in this way, although the children devote two and one-half hours to the rest and nutrition program, they lose but twenty minutes in educational activity. The teachers feel that the children in these groups improve physically to such a degree that their improvement more than compensates for the twenty minutes a day devoted to the rest class program.

Just a few figures to give an idea of the gain in weight of these children in one of the rest and nutrition classes. One child gained 21 pounds, one 16 pounds, one 8¼ pounds, one 6 pounds, and four 5 pounds, all of this in less than 6 months. This is typical of all other classes. Losses in weight were noted in these children after vacation periods. The school attendance of this group of children has been excellent, the only absences having been for children who had tonsillectomies or who were in hospitals for correction of other physical defects.

The mid-morning lunches consist of a one-half pint bottle of milk with bread and butter. The average noonday meal is beef stew with vegetables or macaroni with tomato sauce, bread and butter, baked apple or pudding, and cocoa. The afternoon luncheon at 3:30 o'clock generally consists of a sandwich and milk or cocoa. The average daily cost per pupil for this food is twelve cents.

The Supervisor of Nutrition Classes meets these children and their parents at regular intervals in order to secure and obtain their interest and cooperation in carrying out the health program at home. The probable cause for the malnutrition is explained and health and food habits are discussed. Menus are suggested and the method of preparation is explained. These meetings favor study and correction of home difficulties under friendly circumstances, utilize the experiences of all families for the benefit of each, and economize time by bringing the parents to the class. By health talks, games, etc., the children's own interest is aroused and they are stimulated to enter the game of health.

The health and nutrition program as outlined above has the following advantages:

1. It includes all the pre-tuberculous and malnourished children, irrespective of grades.
2. As soon as a child attains normal weight and health he returns to the regular school program.
3. Convalescing children may be included temporarily and are thus often enabled to return to school earlier than otherwise.
4. It obviates the necessity of special open-air class teachers.
5. It maintains continuous close contact between the school and home.

During the school year 1924–25 the school physicians found nearly 3,000 cardiac cases in the Boston public schools, and the writer of this paper feeling that this condition was vitally important and available statistical information as to the number of school children so affected, indicated such a marked variant throughout the country (anywhere from .5 per cent to 4 per cent organic) arranged a meeting with the most eminent cardiologists in the city for the purpose of obtaining their cooperation in determining exact data with reference to heart disease in the public schools.

The most we hoped for was perhaps that arrangements might be made whereby special cardiac clinics might be established in the various hospitals throughout the city, but like all big spirited men, these heart specialists showed the fullest measure of cooperation by being not only wishful to help, but gladly offered their services to come into the schools not only for the purpose of examining the cardiac cases found by the school physicians and supervising school physicians but were also very desirous to examine hundreds of the so-called potential cardiac cases.

The cardiologists who undertook this work are heads of their staffs at the largest hospitals in Boston. These examinations have been completed and as a result of this survey we have found that we are averaging about three-quarters per cent organic cardiac disease in our school system. The survey findings have recently been published in "The Nation's Health." There have been

various editorials on this survey and the consensus of opinion is that the cardiac survey conducted in the Boston public schools should stimulate undertakings in other cities so that in time a fuller understanding of the problem may be obtained.

The writer feels the necessity of presenting two facts in connection with the cardiac survey, namely, that it is the first survey of its kind ever conducted in any city in the United States, and that it was conducted with absolutely no expense to the School Committee or to the pupils.

Every cardiac case found to be organic and likewise every cardiac adjudged by the specialists as of the potential type, was carefully observed and each parent was notified as to the opinion of the cardiologist and likewise each family physician was acquainted in writing with all the facts concerning the diagnosis and have been given the most ethical cooperation by the Department of School Hygiene. These organic cases and others diagnosed as such now and hereafter by the school physicians are turned over to the supervising school physicians for their final determination as to care and recommendations.

The law of our Commonwealth demands that all children between the ages of fourteen and sixteen years of age applying for employment certificates must be examined by a physician assigned to this work by the School Committee or by a family physician. In Boston this work is centered in the physician assigned by the School Committee to the Certificating Office. Approximately 10,000 children between fourteen and sixteen years of age are examined by this physician annually. During the period July 1, 1927 to April 30, 1928, 3,545 children were examined physically for their first employment certificates, and 4,689 inspections were made of children who returned to procure certificates for new employment. A school nurse is also assigned to this office who assists the physician with physical examinations and inspections and performs the follow-up work to effect the correction of physical defects. She works in conjunction with the teaching staff and the employment department of the Continuation School recommending suitable work for children according to their physical ability. Children physically unfit to work are referred by her to the Attendance Department and these children are returned to the regular day schools and their physical defects followed up by the local school nurse. It may be well to state in passing that Boston is the only city in Massachusetts conducting such a thorough examination and having such a follow-up system for these children who are leaving school to enter industry. Other cities are now emulating Boston, and legislators and public health officials are striving to have our plan adopted by the Commonwealth as the standard.

It is a well recognized fact that the younger the child the more susceptible he is to diphtheria. Last year a diphtheria prevention campaign was introduced into our kindergartens and first grades. Since nearly 60,000 children had been previously protected against diphtheria with toxin-antitoxin there was sent to the parents of the children in our kindergartens and first grades in the fall of 1926 a plea for their help to eradicate diphtheria, a disease that in the opinion of the public health authorities throughout the world is preventable. In the past two years nearly 20,000 children have been given three injections of toxin-antitoxin. This work is to be done annually with the hope that eventually we will have as nearly as possible a 100 per cent school population immunized against diphtheria.

An otologist has been appointed who works in connection not only with the physical examinations but also the ear examinations in The Horace Mann School for the Deaf. He is subject to call and consultation by other school physicians and by the supervising school physicians throughout the entire school system. We feel that a capable otologist is a very necessary adjunct to any school medical force. The Boston public school system is most fortunate in having in its employ one of the most able otologists in the city. Through his recommendation we are now using an instrument called the audiometer. The State law decrees that the hearing and vision tests shall be conducted by the teaching corps. That this work has been excellently done there can be no question but we feel that with the use of the audiometer we are now able to detect the so-call missed cases, and these are a significant number in a school population of 130,000. For example, in the school year 1925–26, a total number of 80,520 pupils were tested by teachers of which number 486 pupils were found defective in both ears, which gives a percentage of 6/100 per cent defective. In 1926–27, a total of 81,000 were tested by teachers of which number 523 pupils were found defective in both ears, which also gives a percentage of about 6/100 per cent defective. In 1925–26 of 80,520 children tested, 572 were found defective in one ear which gives a percentage of 7/100 per cent defective. In 1926–27 of the 81,000 children tested, 552 were found defective in one ear which gives a percentage of about 7/100 per cent defective.

During the last nine school months the audiometer has been used with the following results:

Number of children tested by audiometer	20,658
Number defective in both ears	452
Percentage defective in both ears	2.13
Number defective in one ear	1,165
Percentage defective in one ear	5.63

This is a wide variant and is important. For example, in one school building, a group of 688 children were tested. The total number of children found defective in hearing on examinations by teachers was 14. In the same group in the same building 26 were found defective by the audiometer. This shows a variant of about 90 per cent.

The children found defective by the audiometer test are given an intensive ear, nose, and throat examination by the otologist (who is also a competent laryngologist). In all instances the otologist has the final determination as to the proper placement of these children. If the otologist feels that the condition requires special educational environment, placements are made either in the special lip reading classes or in the Horace Mann School for the Deaf. To date 207 cases have been recommended for admission to the lip reading classes. All the cases found defective are referred to the family physician with the recommendation that their private otologist be given an opportunity to correct the defect. Those who are unable to make such provisions are furnished clinical opportunities at our various institutions and hospitals for special treatment.

The law of this Commonwealth also provides that the tests of vision shall be made by the teachers. Inasmuch as a wide variant has been shown in connection with the hearing tests, it is fair to assume that the same condition obtains with respect to vision.

The appointment of an ophthalmologist was recommended to the School Committee. This recommendation was approved and the appointment to this position was made as of September 1, 1928.

Three assistant supervising nurses have been appointed to supervise the nursing corps in the field and to act as assistants to the Supervising Nurse. Their duties and their work come under the immediate jurisdiction of the Supervising Nurse and their functions are comparable with those of the supervising school physicians. The three assistant supervising nurses promoted from the ranks entered upon their duties in January 1927 with an insight into school nursing gained by years of actual experience which enabled them to fully appreciate all the problems arising in a district and the best methods to pursue in their solution. They are responsible for the work in their districts, are given authority for directing measures to accomplish this task and to adjust such problems as are beyond the power of the school nurse to settle, and to decide which should be referred to the Supervising Nurse. They "initiate," instruct, encourage newly appointed school nurses and aid them in systematizing their work. They arrange for the introduction and successful conduct of new activities such as the use of the audiometer for testing hearing, the Ten Years Underweight Program, and the toxin-antitoxin immunization work.

They plan schedules for reservations at the various dental infirmaries and relieve the supervising nurse of the major part of the field work. By their supervision and guidance they stimulate the nurses to grow professionally and to work without undue strain to the maximum of their efforts and capabilities to the end that the great army of children leaving our schools each year will be physically and mentally prepared to be useful citizens.

Some believe that there are so-called school diseases. We claim that this is not so. The schools are not incubators for any disease and we do not advocate the closing of schools in the event of any explosive outbreak of any communicable disease. In the schools we have adequate medical inspection. A capable and efficient nursing service is maintained and with this protection it is apparent to anyone that the children are much safer in the schools than they would be if the schools were closed and the children allowed to mingle promiscuously with others on the street corners, in playgrounds, and in moving picture theatres.

It is interesting to note the poliomyelitis flare-up in Massachusetts in 1927 which definitely proves, both theoretically and practically, the small part that the school plays in the transmission of disease if the school system has a well organized medical staff. There were 260 cases of infantile paralysis reported in Boston from August 1 to November 29, 1927. Of this number 50 were public school children—only 19 per cent of the cases reported.

The rules and regulations of the Boston School Committee state specifically that the health of the school child and the sanitation of the school buildings come under the jurisdiction and general direction of the Director of School Hygiene. Reports coming from principals, supervising school physicians, and school physicians, together with the accumulated data gathered from actual visits on the part of the Director to various schools indicated that a higher standard with respect to sanitation was needed in our public schools. Criticisms had been received relative to drinking facilities (bubbling fountains), toilet facilities, washing facilities, ventilation, situation of and facilities in open-air classes, defective plumbing, and general insanitary conditions. Inasmuch as childhood is that period of life when important health habits should be formed, and likewise inasmuch as the child spends five hours daily in school from periods varying from ten to fifteen years or more, it seemed desirable to provide the child with such facilities as would make desirable hygienic habits possible of development. It was greatly desired that the Department of School Hygiene should function to its highest efficiency, and in the opinion of the Director, his department would attain a higher standard of efficiency if a sanitary inspector were assigned for duty in connection with this department. School physicians are not sanitary experts, and although it might seem that any physician should

know sanitation, as a matter of fact the ordinary physician is acquainted only with the elementary knowledge of this subject. The writer therefore recommended to the School Committee the appointment of a sanitary inspector who should have a thorough knowledge of sanitation and a working and practical knowledge of the science of public health. This recommendation was approved by the Board of Superintendents and the School Committee and on September 1, 1928, a sanitary inspector was appointed and assumed office. In the creation of this position and in the appointment to this position, we merely wish to assure the child, as early as possible, as habitable living conditions in our school system as obtain in the home. The sanitary inspector has jurisdiction over sanitation of all school buildings. Since this important appointment there has been a marked increase in the correction of sanitary defects. This sanitary inspector has made an intensive study of the sanitary conditions in 325 schools in one year for the detection of sanitary defects and has made 778 re-inspections to ascertain whether or not the defects have been remedied. As a result of this work 915 minor defects have been remedied and 149 major defects have been corrected.

The Director of School Hygiene, in conference with the members of his Advisory Council on Health Education, together with the Principle and the Dean of The Teachers College of the City of Boston, has succeeded in placing in the curriculum of The Teachers College a course in Health Education. This course is required of all pupils, and when it is understood that over 98 per cent of all pupils attending The Teachers College ultimately become teachers in our Boston public schools, it will readily be seen that these prospective teachers should be as well equipped to teach health education to our children as they are to teach the other elementary subjects required for the school child.

Under the direction of the Department of School Hygiene a course in health education for the teachers in the Boston public schools was inaugurated in October 1927. This is a 30 hour lecture course which counts towards college degree credits.

The subjects upon which lectures were given during the course last school year were:

Why Health Education?
Psychology of Health Education.
Methods and Devices in Health Education.
Source Materials in Health Education, their Evaluation and Uses.
The Organization of Health Education by Grades.
Nutrition of the School Child.
Posture of the School Child.
Desirable Health Habits of the School Child.
Tuberculosis Prevention in the School Child.

The Physical Environment and the Health of the School Child.
The Obligations of the School as to the Mental Health of the Child.
Preventive Dentistry as Applied to Pupils and Teachers.
Cooperative School Nursing Service.
Focal Infections of Early Life, their Relationship to the Degenerative Diseases of Middle Life.
Accident Prevention and First Aid.
Coordination of the Teaching Force and the Department of School Hygiene.
Advanced Methods in Testing of Hearing of the School Child.
The Duties and Functions of the School Physician.
Immunity and Susceptibility to Disease.
Smallpox and its Prevention.
Serums and Vaccines.
The Acute Upper Respiratory Infections with Especial Reference to the Common Cold.
Disease and its Prevention.
Measles—German Measles—Etiology, Modes of Transmission, and Methods of Control.
Scarlet Fever—Diphtheria—Etiology, Modes of Transmission and Methods of Control.
Communicable Disease Résumé with Special Reference to Detection in Incipient Stage.

Two written examinations are held in connection with this course, one at the termination of the first semester, and one at the close of the course.

This is an annual course and we are pleased to state that it has the largest attendance of any course at The Teachers College.

The Department of School Hygiene contemplates a posture survey, and this will be conducted by specialists in orthopedics. In the opinion of the writer this survey is necessary because it is a well known fact that in a school population of 130,000 pupils there are many instances of minor postural defects that could and would be prevented by the introduction of simple muscular tone corrective exercises. In the correction and prevention of these minor postural defects, the Department of School Hygiene will receive the united support of the Department of Physical Education whose physical training and military drill instructors are specially prepared to introduce into our system this most commendatory and laudable service.

Expert services will be obtained for this posture survey without expense to the City of Boston.

The Department of School Hygiene of the Boston Public Schools has been fairly, yes, generously dealt with by critics and surveyors. We are proud to know that recently Boston has been

recognized as having one of the leading Departments of School Hygiene in the country. This laudatory comment and this honor is very much appreciated, and may justify the presentation of this paper.

A MODEL RURAL SCHOOL HEALTH PROGRAM

B. T. MCDOWELL, M.D., BRISTOL CENTER, N. Y.

In New York we have an Education Law which permits a County Board of Supervisors, with the approval of the State Commissioner of Education, to establish a School Hygiene District. It applies in particular to rural schools. It may include all of the rural schools in the county or only those in one supervisory district. Cities with less than 50,000 people and villages with more than 4,500 may be included by approval of the health committee of the district and the State Commissioner of Education.

When a school hygiene district is thus established the law creates a school hygiene committee consisting of the Chairman of the Board of Supervisors and such district, city and village superintendents as are included in the district.

This committee directs the administration of the law. It has authority to employ a physician as health director, fix his salary and direct his activities. It must recommend to the Board of Supervisors the amount necessary to meet expenses. One-half of such expenses are paid by the County, the other half by the State. The Board of Supervisors of Ontario County established such a school hygiene district on May 31, 1928. The State Commissioner of Education gave it his approval on October 2, 1928.

Prior to action by the Board of Supervisors the County Medical Society had endorsed the plan. The Rural District School Superintendents were also in sympathy with the movement.

Our State Medical Inspector of Schools appeared before the Supervisors on the day on which the question was voted upon, and offered the following reasons why the establishment of a school hygiene district in Ontario County would seem desirable:

1st—Such an Organization would stimulate school physicians to do better work and encourage all physicians to give more attention to the recognition, prevention and correction of physical defects.

2nd—It would encourage the hospitals in the County to cooperate more extensively with physicians that the best of follow-up attention or medical service would be made available at a minimum expense.

3rd—It would enable the health director of the County, by cooperating with the Ontario County Hospital and Laboratory to utilize in an effective way these excellent institutions for the benefit of the children of the County.

4th—It would better acquaint teachers with the purposes of school health service with which most of them are unfamiliar and to enlist their

cooperation to make medical inspection and health service more effective in the classroom.

5th—It would acquaint parents with the program of school medical inspection health service, increase their interest and secure their cooperation with teachers, nurses and family physicians that the home and the school may work in closer cooperation for the mental and physical health of children.

6th—It would establish a closer cooperation among all the physicians of the County that a united medical profession may lead in a safe and practical health program for children.

7th—It would systematize the nursing service in the County that duplication may be avoided and maximum results from nursing service accomplished at a minimum expense.

8th—It would enable the coordination of all agencies working in the County that are interested in and contributing to health service that all would be of mutual assistance to others.

9th—It would result in a far more effective control of communicable diseases among children which is often much needed.

10th—It would emphasize the fact that school medical inspection and health service does not end at the school but extends to the home where its influence would be even more widely felt.

11th—By establishing a uniformity of health service throughout the County the smaller or weaker districts would be assured equally as efficient service as is now found in many of the larger and more fortunate districts.

12th—By better health supervision increased attendance would be assured which in schools with more than five teachers determines to a degree the amount of public moneys received. In other words it would be financially profitable to the County in this as well as in many other respects.

13th—By placing all of the school health activities of the County under one responsible directorship as contemplated in the school hygiene district plan the County and its communities would be far more certain to receive the kind of health service for children for which parents are today asking and which is always found profitable.

14th—It would enable the county to avail itself of liberal State aid, for health protection for school children.

On July 23, 1928, the School Hygiene Committee appointed Dr. B. T. McDowell of Bristol Center as District Health Director. His salary was made $4,000. Eight cents per mile will be allowed him for travel by automobile. He will have charge of 146 rural schools. In many of the smaller schools he will make the physical examinations. He is provided with an office at Canandaigua, the county seat, centrally located. He will have a secretary-stenographer in charge of his office. Most of his time will be devoted to field service. The law under which he was appointed outlines his duties as follows:

"It shall be the duty of the district director of school hygiene to advise, assist, and exercise general supervision over, medical inspectors, dentists and school nurses in the public schools in such school hygiene district; to keep informed as to their work and require such reports from them as he may deem necessary; to see that suitable recommendations based on the findings of the medical inspectors in their examinations of pupils are

brought to the attention of their teachers and of those in parental relation to such pupils; to aid, and keep informed as to the work of, oral hygienists, nutrition workers, and other school employees engaged in health work in such schools; to inspect, and report to the proper authorities on, the sanitary conditions of school buildings, and in other ways to promote the physical welfare and health education of pupils."

The plan is strictly a county affair. The health director and his secretary are local people. As others may be added to the staff they will be chosen from the county. The Board of Supervisors and the School Hygiene Committee feel confident such a policy will not only arouse greater public interest but insure success of the movement.

When in full operation, which will of course take some time, we hope and expect to have a model Rural School Health Program in Ontario County.

A MODEL SCHOOL MEDICAL INSPECTION PROGRAM IN RURAL SCHOOLS

JAMES FREDERICK ROGERS, M.D., DR. P.H., CHIEF, DIVISION OF PHYSICAL EDUCATION AND SCHOOL HYGIENE, U. S. BUREAU OF EDUCATION

As we see it from the U. S. Bureau of Education, this subject somehow reminds one of the problem which a turtle presents to a hungry dog. It has so many sides to it and it is hard to know where to take hold.

In the first place what is meant by a rural community? Is it a few hundred people scattered over many square miles as in some western states, or is it a compact village of 2,500 inhabitants, which comes within the definition of rural as adopted by the Bureau of the Census? Are we dealing with a one-room school of 20 or 30 pupils, or are we planning for a consolidated school with a dozen rooms and hundreds of pupils? Is it in a state with a medical inspection law requiring the employment of a physician, or one in which there is no law, or one which is ineffective? Is it in a community already prepared for health work, or one in which there is likely to be antagonism to such work? Is there a county or a district health organization? Is there county or district supervision of schools or is there neither of these?

In only four or five states do we have active direction and stimulation of medical inspection from a state department of health or education, and in these states most of the children in rural schools have some kind of a physical examination, but in the rural regions of the remaining states comparatively few children have even had their vision tested. The medical inspection

in the schools of many cities is insufficient and inefficient enough, but in rural districts it is well-nigh wanting. This is true also as regards other forms of health work.

The knowledge of the absence of health work in so many rural schools, and the great variety of situations to be met, from one-room schools with a teacher working single handed, to districts, such as those of New York, which may possibly command every modern convenience in the way of personnel, equipment and support, led me to prepare a brief outline of how to go at this business of health work. We have hoped that the suggestions in this leaflet, "Ten Steps in the Promotion of Health in Rural Schools," would be of help to the teacher, principal, the district supervisor, the health officer or local physician or whoever must take the initiative.

We have set up no model medical inspection program. We may be thankful at first to get *any* program, and after all, it must be made to fit local conditions. It may only be a teacher with her eyes and ears opened to the fact that certain pupils cannot see or hear as well as they ought, and tactfully asking the parents to consult their physician in the matter; it may be a district nurse making examinations in routine fashion; it may be a complex organization with physician, nurses, treatment clinics and what not. It does not matter much what the organization is, so that it is the best possible under the circumstances and so that it works, and the finest piece of medical inspection machinery will not work as it should without certain essential conditions which I would like to point out. There must be a thorough understanding of what we are driving at on the part of local physicians (in which case we will have their help and not their opposition). There must be understanding and cooperation on the part of parents, and their presence at the examinations or at least the first examination of their child. We should not waste precious time and money in nurse visitations, especially in rural sections, when this might be made needless or greatly reduced by parent presence at school. Of course if we are running on factory piece work methods in medical inspection and must finish up a dozen or more children per hour we may find that the presence of parents sometimes interferes with our schedule but not necessarily so. Medical inspection should merge into health education and if we are to find out about the child's habits we will, of necessity, have to consult and advise with the parents. The school physician should not consider himself today as a person apart from the educational scheme and he should be given the time to do his work properly.

Thirdly, there should be understanding and assistance on the part of the teacher, around whom the health work must center. She sees the children every day, sees all of them, sees the new

comers and those returning after sickness, sees them functioning in work and play, and she sees them in the beginning stages of communicable disease.

In a rural community the choice of the medical inspector is of the greatest importance. In one whole state the machinery for medical inspection, from state director down, fell to pieces because local practicing physicians were appointed in communities where there were other physicians. These school physicians inevitably treated some of the cases which they had examined and, whether or not these were former patients, the local medical fraternity blew up and the whole fine scheme fell through, even the state director being made to resign. There must be understanding and cooperation of the local physicians and of course their rights should be respected. Where but one physician serves the whole school community, he may well serve as school physician, but otherwise the examinations would better be made by a nurse or by the teacher.

It has long been my opinion that the basis for best organization of rural work lies in the formation of a health unit, such as the districts recently organized in New York State, and I felt that this state had led the way when its law was passed permitting the establishment of such units. I have been disappointed that such organizations were so slow in materializing but some of us are too impatient in such matters.

It seems to me that in such a unit the director should be a physician in charge of all activities pertaining to health. As medical inspector he should have nothing to do with the local practice of medicine. He should, in the beginning, train his teachers and such nurses as he may have in the art of physical examinations. He has no business wasting his time in doing things that others can do as well or better; he can thus obtain data (as for example of eye strain) that he cannot get himself and he needs all the information he can get. Dr. Cornell called attention long ago to the dulling effect of routine medical inspection. The physician should reserve his energies and his superior knowledge for nice decisions so that in recommending treatment he will be doubly sure this is worth the risk or the cost. We should fix upon the essential defects and then see that they are corrected.

If parents are not present for all examinations they certainly should be where questions of importance are to be decided such as the need for tonsillectomy, or the application of glasses. As one oculist of eminence remarks, where the Snellen card alone is used, every child who shows visual deficiency by this card should be retested two or three times before it is concluded that the vision is subnormal. There are glass fitters who do not hesitate to apply spectacles to any eyes, but their application except in

really urgent cases is a calamity to the child. Moreover, about half the time the prescription of an oculist is not rightfully filled as I know from experience. It is true that the responsibility for treatment or non-treatment is thrown on the family physician but either he may agree with us merely from courtesy which is bad, or he may disagree which is also bad.

Dental examinations and treatment should be handled exclusively by a dentist, and real prophylactic methods used, instead of the superficial ones at present in vogue.

Lastly the medical inspector should take advantage of his position to do some constructive work and by more thorough records than a mere cipher or cross after eyes, ears, or throat, etc. he should be able to turn out some bit of information which will really add to our knowledge of the causes of defects and their best treatment.

Perhaps this all sounds rather advanced but we can move toward it in such health districts as those of New York State.

In some states counties will be the rural unit. Where there are county health units medical inspection may be very well taken care of by the health officer or one of his staff. It seems to me, however, that for nice coordination of all school health activities these should be under the department of education. It depends on our personnel, and effective work may be done under either organization.

Whether in rural districts or elsewhere, organization for medical inspection must provide means for adequate treatment of all children found defective. In many rural regions most parents are able and willing to have their children taken care of at their own expense, but where this is not the case local or traveling clinics (such as those of North Carolina or in Los Angeles County, California) should be provided. If the local physicians are fully informed as to what we are about, they will not only not antagonize but will assist in this work.

In rural school work we have, as stated in the beginning, a great variety of conditions to be met throughout the land. What stands out as essential in every state is a state law that will put some impetus into this work and will lay on some state officer the responsibility of stimulating and advising local authorities in organizing and promoting such work. I believe this society will be helpful in bringing this about.

A STANDARD GROUP SNELLEN TEST FOR SCHOOL CHILDREN

F. E. HARRINGTON, M.D., CITY HEALTH COMMISSIONER AND SCHOOL MEDICAL INSPECTOR, MINNEAPOLIS

The instrument which I present has been designed for school use. The purpose of the instrument is to conduct the standard Snellen vision test of school children in groups of fifteen. An endeavor to make individual tests with the Snellen type card is not only burdensome but inaccurate because of poor illumination, inattention, and several other factors. It is a long, tedious process to cover a school enrollment for vision test using the individual method. This instrument has been designed to accomplish four main points: (1) it is portable; (2) illumination is constant; (3) it is used in testing children in groups of from twelve to fifteen; and, (4) a record of the vision is made.

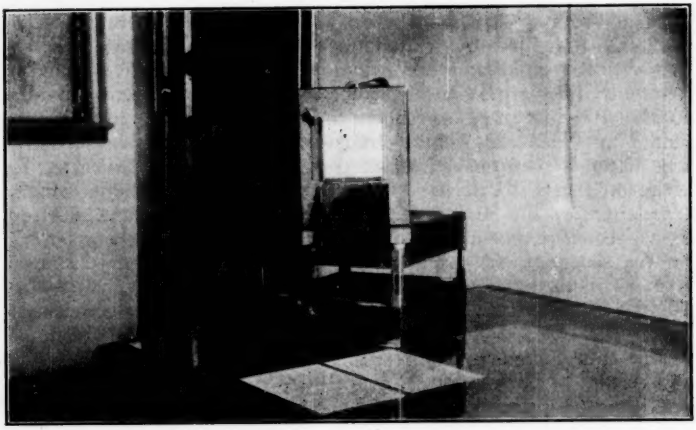
The instrument is an ordinary projectorscope using a continuous strip of film upon which has been photographed the Snellen type corresponding to the 50, 40, 30 and 20-foot sizes. With the short focus lens the type is projected on a screen in the front of the projector box. When so projected the letters are exactly the size of the corresponding foot letters of the Snellen card. The instrument is set up in a room where a 20-foot distance is easily obtained and the children to be tested are placed in a semi-circle 20 feet from the instrument on a radius drawn from the lens to the 20-foot line. A printed form of ten lines in four columns is given the child and the eye not under test is covered with a blind. The largest letter projected on the screen corresponds to the 100-foot type as shown in the illustration, in this instance an "H." The child observes the letter for two seconds. The letter is then flashed off the screen and the child directed to write on the first line the letter seen. The second projection is two letters of the 50-foot type, in the illustration "D A." After a two-second exposure the child is directed to write these letters on the second line. Each group of letters thereafter is a projection of the smaller Snellen type showing two exposures of 40-foot type, two exposures of 30-foot type, and four exposures of 20-foot type. This is repeated for the other eye and recorded in the same manner. The test is run a second time for each eye and results of both tests are averaged. When the child ceases to read the type projected and fails to write the letters, or writes the wrong letters, it indicates a failure of proper vision for the distance indicated. Children wearing glasses are tested on the first round for each eye without glasses and the second round with glasses. With children from the fourth grade up the actual testing can be done in six minutes. After the test the papers are

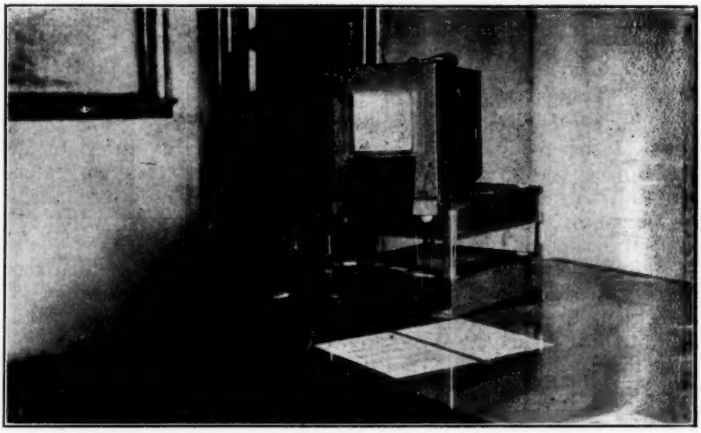
collected, the students sent back to their rooms, and a second group which had been waiting take their places.

There is nothing claimed for this instrument beyond its convenience, accuracy and speed. It is nothing but a projection of the Snellen type corresponding to the Snellen card. So far we have not worked out a set of characters for the grades below the third. This is now in process of study.

For the detection of the hyperopic eyes, which is not commonly done in the Snellen test in schools, a system is now under study and will constitute the subject of a progress report. One nurse with one instrument with school cooperation can test in the neighborhood of fifteen thousand children a year. This instrument can be used wherever electric current is available. The adaptability of the instrument for rural schools without electric light is being perfected.

This instrument, as illustrated below, has been adopted by the Board of Education of Minneapolis for use in the Minneapolis Public Schools.





ACTIVITIES OF THE ILLINOIS STATE MEDICAL SOCIETY IN PUBLIC HEALTH WORK

R. R. FERGUSON, M.D., CHICAGO, ILL.

It is indeed a great pleasure to be with you today at the request of your President and to tell you a few of the activities of the Illinois Medical Society in Public Health work.

We recognize the valuable work being done by school physicians and public health officials and believe they in turn realize that there is no public health work quite as valuable as that which is being done by the general practitioner of medicine. You have our cooperation, but we are not so sure of your cooperation in certain of our activities.

We believe the province of all school physicians, public health officers and nurses as well as lay medical groups should be confined strictly to Prevention and Education, while the general physician in practice must not only do his share in prevention and in education, but also in the cure of disease. May we have your cooperation in this clear cut differentiation?

The Illinois State Medical Society is known throughout the medical world as one of the best organized and most outstanding medical societies. It has been recognized for its foresight in sponsoring certain measures which have proved of great value not only to the profession but to the public, and for its reticence in accepting other measures which have later proved worthless and of serious injury to the public welfare.

Our Society was one of the first to recognize the fact that the public was becoming more and more interested in its health and was going to get information from some source. Why not from the Medical Society? We therefore instituted and recommended that there be a per capita tax on members of the Society for the Educational Committee Work. Our tax is approximately $1.70 per member per year, which gives us a yearly income of approximately $13,000.

The words "propaganda" and "lay education" have been dropped from our vocabulary, as they are misleading and immediately put into the mind of the hearer a false meaning of our mission to humanity.

Experience has taught us to discard some of our early policies, as it has also taught us to hold fast to certain others. Cooperation with lay medical organizations was something new to our own committee. But after a period of five years there is most certainly a better understanding existing between certain of the groups and the medical profession.

The Educational Committee has held fast to the principle that the county medical society is supreme in all local health matters; and much of our work is done through them. We believe that

the county society should be consulted by all city and county officials and all health agencies of whatever description on all medical and health subjects for the reason that the physician is by education and training the best fitted to give expert advice on all health policies. We do not believe the county medical society should be called upon to do the actual work; that should be done by the lay-medical organizations and health authorities in consultation with the medical men. We do not believe clinics, baby shows and pre-school examinations should be held without consulting the county medical society. As a state society, we frown on free clinics of any kind or description in communities where such service can be paid for. We believe in free medical service, both curative and preventive where indicated, and we are always glad to give freely of our service to all those charity cases who are already receiving charity of some kind or another. We are slowly learning that the indiscriminate use of medical charity is demoralizing to the public, and through our passive resistance as medical men to such charity, it is also demoralizing the profession. Free medical charity is not worth much unless given with the desire to be of service to humanity. Only a few charity clinics fulfill this requirement.

The days of passive resistance on the part of the medical profession are slowly drawing to a close in Illinois, and we believe the time is not far distant when every lay-medical organization in the State will be working with our county societies, and will assist us in eliminating all free medical service except to those deserving it. We need the school physicians' help.

For almost four years we have maintained a Speakers' Bureau as one of our most important activities. The speakers are chosen with a great deal of care. This work is growing every year. Not only are new clubs asking for health programs but those already having used the service are asking for more programs. A letter was sent out to the county superintendents of schools suggesting that a health talk would be a fine thing for teachers' institutes. Twenty-seven requests came in from this letter. Thousands of teachers will hear our speakers discuss the health of the school child. This was a decided increase over the calls which came in last fall. You may know that the institutes are held throughout the school year, so many more calls are expected.

Women's clubs especially, have asked for speakers on all kinds of subjects. One club in southern Illinois wrote asking for a speaker who could tell them how to handle the young people of today. The same group is asking for another lecture this year. When certain epidemics have been prevalent there has been an interest on the part of parent-teacher associations in having physicians give talks on these diseases; last winter several requests came for speakers to talk on infantile paralysis.

Several lectures were given in high schools last winter and in one county we scheduled physicians to give health talks in every school. A group of high schools in another county had a series of health talks arranged by our Committee. Some of these were illustrated with films.

All physicians who are asked to fill these appointments in Illinois have the privilege of securing suggested material from the office of the Committee. This means a very big service for it saves time. The office of the Committee is continually gathering all possible material for the use of our speakers and secures from the library of the American Medical Association package libraries for physicians on all subjects.

Even colored clubs in the State have made use of our colored Speakers' Bureau, and if anyone needs information, these people do.

We are now furnishing speakers in every part of the State to any lay group which so requests. There is no charge made for this service and the Committee pays the expenses of the speaker filling the appointment. We have furnished speakers for practically every kind of lay group in Illinois including men's clubs, chambers of commerce, women's clubs, churches, schools, Y. M. C. A., and Y. W. C. A., parent-teacher associations, etc.

Our radio service is something of which we are very proud and is a definite and popular feature of our educational work. Programs are arranged for any local community having a broadcasting station. Station WGN of the Chicago Daily Tribune has been used every Tuesday noon for the last eighteen months—not one week has been missed and occasional series of talks have been given over WLS and WJJD owned by the Herald and Examiner.

The press is one great medium through which we expected to direct the people back to scientific medicine not through paid advertising but through regularly supplied press material on health education of interest to the local communities. If Brady, Reed, and Evans are good (and sometimes they are) then the combined membership of our Society should be better. We are, therefore, constantly gathering material, rewriting, censoring and rechecking material for our regular users. In most cases this material is then sent to some member of the county medical society who rechecks it before it is turned over to the editor. Our subjects are made to fit the local needs. The number of papers using the service has grown from 19 to over 85 in the last eighteen months.

The articles are used in most cases over the signature of the local county medical society. This service is free to newspapers. Our service looked so good that one other state society tried to negotiate with us to purchase our press material for use throughout their state. An endeavor was made to check up on the serv-

ice and see if the editors liked it; the responses that came showed clearly that the public wanted the health column, in fact, the editors say that the health column is as indispensible a part of the paper as the joke column.

The Committee was asked by the Child Hygiene Division of the State Department of Health to rewrite health material for that department. The prenatal letters now going out from the Child Hygiene Division are those we approved.

The Committee has used as many methods as possible in order to reach and interest the largest number of people. We have found that some people will not read articles, they will not listen to lectures, but they will look at moving pictures. We therefore, obtain health films from many sources and pay rental on them if required in order to satisfy this need. We do not accept the responsibility for these films, but they are secured from such sources as the State Department of Public Health and extension departments of state universities. We also arrange posters and health exhibits for high schools, clubs and many other organizations, together with a special program on health educational activities. These posters have been used in many counties of the State. One county thought them so fine that the medical society obtained the use of a vacant store building, had a nurse take charge and arranged the posters in an attractive exhibit which was open to the public. One school in Logan County used the display and the teachers had the pupils write themes using the posters as subject material.

During the first two years the subject of cooperation with other organizations did not appeal to our Committee, but as we became personally acquainted with leaders in some of the lay health groups, we decided that they were not such a bad lot. We even consented to break bread with some of them, and actually found some subjects we could discuss in common, and some health work we might cooperate in. This was good news to both groups.

Some of our first and most reliable contacts were with the Illinois Federation of Women's Clubs, with some 80,000 members; the parent-teacher association, another 80,000 members; and the Illinois State Department of Public Health, and the Illinois State Dental Society. We have sat around the table many times with these groups and discussed the welfare of the public health, as individuals.

We are constantly supplying all of them with speakers, while our physicians are cooperating with the Illinois State Department of Public Health, Division of Child Hygiene, and were helpful in increasing their appropriation by $20,000 for the last two years. We believe that these five great organizations with their thousands of members will be able to go to our legislature in the very near future and demand more money for the educa-

tion of our mothers and babies on health subjects.

The Farm Bureau of the State has looked to us for help through their Home Bureaus and 4-H Clubs. We have been asked to secure physicians' interest in giving examinations to these 4-H Club girls, and this year for the first time, we came to an understanding that the girls should pay for these examinations and that they should go to their family physicians for them. While this has not been done in some instances, it has been tried in several counties and the Home Bureaus realize that this is the proper way in which they should be conducted.

The Illinois State Dental Society has cooperated with us in certain measures and we have assisted them when possible. This last year at the annual clinical meeting of the society which is held in Chicago and represents from 8 to 10 thousand dentists we were invited to have two physicians speak on the value of the periodic health examination and the relationship of the dentist to the obstetrician.

Speakers from the Committee have urged the importance of the periodic health examination, the value of the pre-school child examination and the necessity for people seeing the physician early.

The Educational Committee gives its services to any individual physician or medical society.

The press material, speakers, outlines, posters or films, in fact every possible help, are free for the asking.

I thank you for the privilege of being present with you and taking part in your program.

THE CONTRIBUTION OF A NURSE TO A SCHOOL HEALTH PROGRAM

HELEN F. MC CAFFREY, R.N., SUPERVISING NURSE, BOSTON PUBLIC SCHOOLS

With compulsory education laws came the responsibility on school officials of safeguarding and improving the health of the children drafted into educational service, to the end that they would be able to receive full advantage of all educational opportunities offered.

Departments of medical inspection, school hygiene, or health supervision have been organized and developed in school systems throughout our Country, and the best efforts and devoted service of men and women are given to this work — the welfare of the health of school children.

About a quarter of a century ago the need developed to advise parents about the care of excluded pupils — children who were sent home from school by a doctor or teacher because of some communicable disease. In the majority of such cases, no care was being given to these children, and a great educational loss was incurred.

The best person to work with physicians in school in such cases and to advise parents at home was a nurse.

Care of the excluded pupil and correction of physical defects, important as this work is, is overshadowed by the larger problems of school nursing in the maintenance of health for all pupils.

The activities of the school nurse may best be described under two distinct headings — her work in the school, and her work in the home.

DUTIES IN SCHOOL. A room designated as a Health Room should be set aside in every school building where the nurse reports at an appointed time. Here the children, parents, and teachers come to talk over with her their many problems and difficulties. The conferences range from a splinter in a child's finger, to a teacher who feels ill, to a parent with home troubles, to an adjustment of home troubles, and the rehabilitation of an entire family.

Assisting school physicians with physical examinations. If the group of pupils about to be examined happen to be in one of the primary grades, the parents of these children should be invited to be present when the child is being examined. The nurse welcomes these parents when they present themselves in school. This important feature of school health work is most valuable and one that is thoroughly appreciated by the parents who have availed themselves of this privilege. The school nurse must see that each child has a health card properly filled out, that each child is weighed and measured and the data computed and recorded. The child should be stripped to the waist and presented to the physician for examination, and properly dressed after examination.

During the examination the nurse gives to the school physician all the helpful information she may have in regard to the child from her follow-up work in the home, or information she has received from teacher, hospital clinic, family physician, or others. She carefully records all defects and presents to the classroom teacher a copy of that report.

Daily inspection of pupils. The nurse assists the school physician with the daily inspections of all pupils returning to school after illness, or pupils referred by teachers, or the general inspection of classrooms.

Monthly classroom inspections by nurse. This periodic classroom inspection is a most important phase of school health work on the part of the nurse. In no other way can she become more intimately acquainted with pupils, teachers, and existing conditions. One-half hour each month is assigned to every class, and during this period the nurse inspects the hair, teeth, and skin of every pupil, gives a toothbrush drill to pupils in Grades I to VI. She notes the cleanliness of the children and their clothing,

whether rubbers or overshoes are being worn during school hours, whether children are wearing glasses who should wear them, secures a record of all pupils absent on account of illness or exposure to contagious disease. She also notes the condition of classroom, ventilation, lighting, and seating of pupils. After this inspection a short talk is given in every classroom. These talks may be prepared or may develop from the results of her inspections and observations. These talks are adapted to the age and appreciation of the pupils.

A schedule is arranged previously so that the prepared work of the teacher or class is not interfered with.

Re-testing of vision and hearing. The State law reads that teachers shall test the hearing and vision of the pupils. The school nurse re-tests all that the teachers find defective. In this way, the school nurse is able to reduce the number called defective and to be able to inform intelligently the parent or hospital the degree of defect existing.

Monthly weighing and measuring of groups of children. All malnourished and underweight children are weighed and measured monthly and a record of the results is sent to the parents and another is kept in school. Individual instructions are given to these children and a special effort is made to discover the cause of the loss or lack of gain of weight and to correct it if possible.

Talks to kindergarten mothers and parent-teachers' organizations. In these talks and discussions, the nurse is able to present to the parents much valuable instruction and information.

Nursing care of emergencies or minor ailments. The nurse cares for accidents or emergencies arising during the school session which call for first aid treatment, and for cases which would, for various reasons, receive no care at home, such as dressings of wounds and abrasions, removing splinters, removing foreign bodies from the eye, putting drops in eyes for refraction when the mother is obliged to be away from home. Children who are suffering from simple illnesses such as headache, indigestion, etc., are cared for until recovered or escorted home by the nurse. During these quiet ministrations the nurse is able to instill into the mind of the boy or girl a lesson on morals, good living, suitable companionship, more effectively than would have been possible by any method of instruction on these lines more public.

Health plays and pageants. Demonstrations and health plays are initiated and fostered with the assistance of the teacher. These are given as an incentive to do or as a reward for completion of a group piece of work such as a class having all dental work completed or physical defects cared for. Cooperation is secured in these activities with other departments such as Physical Education, Science, Civics, and others. Many health lessons are taught in play and song and story, and the nurse frequently uses

this method of teaching among the younger children.

She also develops activities in the classroom which carry over and function in the home such as forming health clubs, health plays or games, teaching and the practical application of health habits, stimulating children to go to the dentist, and the wearing of glasses.

Conducting surveys. No one connected with a school is better fitted to secure accurate information concerning health conditions in a school or school system than a school nurse. Her intimate knowledge of pupils and their home conditions enables her to make a valuable contribution when a study is being made or a special report requested. A few of the many requests that have been made and reports given to school officials are:

Investigation of retarded children to determine whether the cause was physical defect or if it was due to other conditions.

Kinds of food eaten by children to encourage use of milk, fruit and vegetables.

Malnourished and underweight pupils — to form rest and nutrition classes.

Epileptics — number of children attending school — number not attending school.

Crippled children — number due to infantile paralysis and other causes.

Absences on account of illnesses — diseases and number of sessions.

Deaths among school pupils annually.

Poor vision — to determine necessity for classes for conservation of eyesight.

Number of strabismus cases.

Consultations with teachers and pupils in schools. An important part of the daily program of a nurse is to report to the teacher the result of a home visit or an excluded or absent pupil; to report the defects found in the pupils at the time of physical examination of her class; to advise her on the care of a case of cardiac disease, nervous disorder, poor posture, defective hearing or vision, or other serious defects where a knowledge of conditions always results in a better understanding between teacher and pupil and often makes the school life of a child happier. The cooperation of the teacher and the nurse in the case of the physical and mental health of the child cannot be divided. The support and interest of the teacher is the cornerstone of the success of a school child. Teachers are advised relative to recommendations and arrangements for placing children in the proper classes for their physical and mental development.

DUTIES IN THE HOME. Inasmuch as the real reason for the being of a school nurse is to keep a full attendance of well children in school or, in other words, to see that every child is able to receive educational advantages, it can be readily understood that home visiting is an important part of school nursing.

It has been said that a teacher does not know her children until she knows something about the environment that has made them what they are, whether their parents are living, whether one or both parents work, and at what.

When a picture of the home is given to the teacher by the nurse it is mutually helpful to both teacher and child. It is impossible to be fair to the child if we are ignorant of the environment in which he lives the greater part of the twenty-four hours.

In home visiting the tact and personality of the nurse plays an important part. She has the ability to see another's viewpoint and is the confidant of parent and pupil. She enters the home with a friendly attitude to enlist the aid of the parent in the prevention or correction of a condition or defect. When it is necessary to give instructions in the home the nurse endeavors to do so without the knowledge of the child so that his faith in the infallibility of the home may not be destroyed. This results in strengthening the authority of the home.

One visit, however, does not always bring the desired results. Many cases require repeated visits to convince a parent of the importance of medical or surgical treatment.

Home visits are made:

To secure correction of defects and conditions;

To see that pupils who are ill are receiving proper care or medical treatment;

To explain to parents the advantages of having their children who are mentally or physically handicapped attend classes where they will receive special instruction;

To explain the recommendations of teachers, school physicians, hospital physicians, and others interested and concerned with the welfare of the child;

To explain to parents the value of protecting their children against diphtheria.

She instructs, advises, and demonstrates treatments. She gives instructions upon ventilation, sanitation, cleanliness of home and members of the family, proper food and preparation, proper sleeping quarters for parents and children. She notes, and reports to the proper authorities when necessary, suspicious communicable diseases, unfavorable social conditions, bad housing conditions, alleys, streets, lack of employment, neglect and poverty. She has a charitable understanding of the poor and their troubles and limitations, recognizing always that individuals and

families are happiest and do their very best when contented and that contentment does not always mean wealth. She endeavors to place the responsibility for the physical care of the child directly where it belongs — in the home — and does not attempt to share it until all means have been used and exhausted to persuade parents to assume their duties and responsibilities.

A most important duty of the school nurse is to teach self-help to children and parents. Hence she must secure the intelligent cooperation not only of the parents but of the children themselves. Often we have been met with opposition and utter indifference on the part of the whole family simply because the child himself did not want to have his head treated, did not like to wear glasses, and was unwilling to go to the doctor or dentist.

Escorting Pupils to Hospital and Dental Clinics. When parents are unable to secure the services of a private physician or dentist, and, on account of the mother being obliged to go to work or having small children at home to care for, they are unable to escort their children to a hospital or dental clinic, the nurse will, upon securing signed permission from the parent, escort these children to clinics.

Since the introduction of nursing service in our schools, special classes have been organized for mentally and physically handicapped children, such as sight saving classes, speech improvement, lip reading, posture, open-air, rest and nutrition, mentally defective, and others, and the school nurse has played an important part in demonstrating the need of creating these special classes. In addressing a group of nurses a few weeks ago a prominent public health worker said that "owing to the great expense connected with health work in schools, school nurses were challenged, as it were, to secure the correction of the defects found in school children by the physician." I believe that school nurses in every school or school system are earnestly accepting this challenge so far as they are able but they must have the closest cooperation, guidance and assistance from physicians, in school, in private practice, and in hospitals. The plea of school nurses everywhere is that there might be some standardization of diagnoses. What is meant by defective tonsils, for instance? Many times just enlarged tonsils! Parents take these children to their physicians or to hospitals to be informed that nothing should be done, yet it is a defect uncorrected so far as school statistics are concerned. What is true of tonsils may be true of several other defects, notably malnutrition and cervical glands.

That the nursing division of the Department of School Hygiene of the Boston Public Schools is ably attacking and caring for defects found among pupils is evidenced by the fact that 76 per cent of all remedial defects are corrected or placed under treatment. Some of the outstanding results on a few defects are as

follows:

Since 1913 all cases of organic cardiac disease found by school physicians have been cared for by private physicians or at hospital clinics. This has been due to the immediate personal visits to the homes after the physical examinations of the pupils, and the interest of the parent has been aroused. Teachers are informed of these conditions and special considerations are shown these cases so far as it is possible.

One of the outstanding accomplishments of the nursing division is the remarkable results obtained in the care of the teeth of school children.

Absenteeism on account of toothache has practically disappeared from our schools, and where formerly *classes* qualified for "All dental work completed" certificates, the past year's results show entire *schools* with every child having dental work completed.

One of the first duties assigned to the school nurses in 1907 was to care for a group of 28,435 children who were found to have defective vision as a result of the testing of vision of school children by teachers in compliance with the General Laws of the Commonwealth. The homes of these children were visited and parents urged to secure correction of this defect. Children whose parents were unable for various reasons to secure examination for them were escorted by the nurses to eye clinics.

The painstaking manner in which this work is carried out is shown in the conspicuous decrease of cases of defective vision found year after year. The report of defective vision cases between 1907-8 and 1926-27 shows a marked decrease. In 1907-8 31.5 per cent were found defective; in 1926-27 10.41 per cent were found defective.

It is not in figures however, that one finds the true measure of achievement in work with children. The confident, happy smiles of an army of healthy children in schools and on playgrounds today testifies to the devoted service of teachers, nurses, and physicians in our schools. That the school nurse is a vital force in any school system is evidenced by the following statement from a school superintendent who has been closely identified with the work of school nurses for a long period of years — Doctor Jeremiah E. Burke, Supt. of Schools of Boston — "One cannot praise too highly the wonderful work done by our corps of nurses in promoting and conserving the health of our school children. They are the embodiment of unselfish service. They are the skillful assistants of our school physicians; they have the respect of our teachers, and the confidence of all parents. I would especially emphasize their relation with the mothers. They visit the homes in an unobtrusive and professional manner, and are the harbingers of fresh air, sunlight, and dietetic reform. We could not keep house in Boston without them."

EVENING SESSION

6:30 o'clock

West Ball Room Stevens Hotel

Dr. Howe presiding:

Your presence tonight is indeed a great inspiration to the movement to organize school physicians for their mutual benefit and greater efficiency in one of the most important phases of public health. As retiring President of the American Association of School Physicians, I am proud and delighted to welcome such an auspicious gathering to its closing session. All of our meetings have been largely attended. Much of interest has been presented. Other good things are to follow tonight. Let me first present one of the best; our President-elect for 1929, Dr. John A. Ceconi of Boston.

Dr. John A. Ceconi:

I sincerely thank the President for his very complimentary introduction, and I also wish to thank the assembly for the gracious manner in which I have been received.

These few words of mine will constitute the briefest speech of the evening. Of course, you all know that anyone should be highly pleased with the great honor that has been conferred upon me by the members of the American Association of School Physicians, by electing me their president. Another reason why my remarks should be very brief—you know I come from Boston, and Boston is still considered a Puritanical city and, of course, it is necessary for me as Boston's representative, to sustain its reputation as to modesty.

The election to the Presidency of this organization is a great honor, but it will not be an easy job, as I am now in the unfortunate and embarrassing position where I will necessarily have to follow in the footsteps of our former President, Dr. William A. Howe, of Albany, New York, whose efforts and contributions for and to the success of the Association, will be very difficult to emulate.

However, Dr. Howe, I promise you, sir, and the members of the Association, that I will firmly and carefully carry the banner which you have placed in my hands and attempt to lead the Association to the highest possible point that I am able.

The Chairman:

That the Association will move forward along progressive and constructive lines, under the able leadership of our new President, there can be no doubt.

To successfully finance the establishment of a new Association when so many others are already in the field is not an easy matter. Such has been done during the past year. Credit for its success is due to the activities of the officers of the Association, aided by many school physicians throughout the United States and Canada. You will be interested, I am sure to hear the first annual report of our Secretary and Treasurer, Dr. Frank L. Salisbury of Cleveland.

Dr. Frank L. Salisbury:

As Secretary and Treasurer of the American Association of School Physicians I am pleased to submit the following financial report from October 17, 1927, to October 15, 1928:

Total receipts for the year		$688 00
Expenditures were as follows:		
Printing	$130 20	
Stenographic service	55 00	
Postage	76 76	
Reprints	23 75	
Convention Expenses	15 00	
Equipment	4 79	
		305 50
Balance on hand		$382 50

The Chairman:

Our Association from its inception has been fortunate in enjoying cordial cooperative relations with the American Public Health Association. Each year we have met with this Parent Association. We expect to continue to do so. We expect, as our organization grows, to contribute materially to the strength, numerical and otherwise, of the distinguished Association to which many of us already belong. Dr. Harold H. Mitchell, Chairman of the Child Hygiene Section of the American Public Health Association, is with us and I am sure will be pleased to speak to us.

Dr. Harold H. Mitchell:

I congratulate the American Association of School Physicians not only on their meetings with their large attendance, but also upon their recognition of the greater interest in problems of school physicians than has been heretofore recognized. The variety of interest in school health is most extensive. At this meeting I have realized more fully that school physicians want to discuss their problems and they want to hear what other school physicians are doing and how they do it.

The strong cohesive force that holds together the medical profession in their bond of common interest appears to work equally effectively among school physicians. School hygiene has become a tremendous subject. We need to know each other better and we need to help each other more.

The officers of these two Associations have already had several discussions this week about our relationships. We of the Child Hygiene Section of the American Public Health Association recognize the need revealed by these meetings for more discussion of school health problems and the need for greater opportunities to know each other. Likewise the officers of the American Association of School Physicians as fellows and members of the American Public Health Association are concerned with the interests of the American Public Health Association as the professional organization of public health workers of the country. I am assured that before this meeting closes the relations of these two organizations will be worked out to the interests of both Associations.

The Chairman:

Los Angeles enjoys the distinction of having one of the best organized systems of school medical inspection and health service in this country. Under the able leadership of Dr. Sven Lokrantz, special attention is being given to the selection and management of cardiopathic cases. Dr. Lokrantz is unable to be with us tonight. His assistant, Dr. H. E. Morrison, will present the paper.

THE HEALTH SUPERVISION OF SCHOOL CHILDREN WITH HEART DISEASE IN THE LOS ANGELES CITY SCHOOLS

SVEN LOKRANTZ, M.D., MEDICAL DIRECTOR, LOS ANGELES CITY SCHOOLS

Presented by H. E. Morrison, M.D.

Ladies and Gentlemen:

As it was impossible for my chief, Sven Lokrantz, M. D., Medical Director of the Los Angeles City Schools, to attend this meeting, he asked me to read this paper which he has written.

In order to understand the Health Supervision of the School Children with Heart Disease it is necessary to have an understanding of the general Health Program of the School Children of Los Angeles. There are 300,000 children in the schools. The Health Supervision is done by 400 health workers, 40 physicians, 100 nurses, 150 teachers, 20 dentists and about 80 clinical assist-

ants and volunteer physicians. The Health Division is divided into the following departments:

1. *Physical Examination by Physicians.* Every child is examined at least four times during his school life.
2. *Physical Inspection by Nurses.* Every child is inspected every week for contagion.
3. *Physical Examination of Teachers.*
4. *Corrective Physical Education in the Senior, Junior and Elementary Schools.* There are about 105 fully equipped corrective rooms in operation, reaching approximately 40,000 children with foot conditions, back conditions, heart conditions, nutritional disturbances and other conditions where the private physicians are advising special cooperation from the corrective teachers.
5. *Health Supervision of Kindergarten Children.*
6. *Nutrition Section.* Reaching 100 nutrition classes.
7. *Open Air Sun Rooms.*
8. *Health Centers.* There are now 14 school clinics in operation. operation.
9. *Traveling Health Clinics.* There are now two in operation.
10. *Dental Section.* With 20 dentists working on full time.
11. *Sanitation Section.* A complete sanitation survey of the entire system is made every year.
12. *Control of Contagion.* This is directed by an epidemiologist.
13. *Health Work Permit Section.*
14. *Conservation of Eye Sight Section.*
15. *Conservation of Hearing Section.*
16. *Mental Hygiene Section.*
17. *Health Education Section.*
18. *Prevention of Tuberculosis Section.* Headed by a Board of seven specialists.
19. *Occupational Therapy Section.* For Cripples.
20. *Red Cross Nursing Section.*
21. *Health Supervision of R. O. T. C.*
22. *Laboratory Service.*
23. *Vital Statistics.*
24. *Special Health Lecture Service.*
25. *Orthopedic Section.*
26. *Section on Prevention and Relief of Heart Disease.* Headed by the Heart Board.

The following booklets have been edited by Sven Lokrantz, M. D., under the Division of Health and Corrective Physical Education (all of which can be obtained if requested):

1. "Duties of the Physicians and Nurses in the Los Angeles City Schools."

2. "What Every Principal and Teacher Should Know About Conservation of Hearts Among School Children."
3. "Outline for Nutrition Classes."
4. "Open Air Sun Rooms."
5. "Quarantine Rules and Regulations."
6. "Health Supervision of Kindergarten Children."
7. "What Every Principal and Teacher Should Know About Conservation of Eye Sight of School Children."
8. "School Sanitation Outline."
9. "Printed Annual Reports."
10. "Psychiatry and School Health."

CARE OF CARDIAC CASES

The following rules for children with heart defects have been in operation since 1918:

1. Program is to be so arranged that the child will have few or no stairs to climb.
2. If situation permits, child should be placed in a corrective physical education class if it meets with parent's approval.
3. If there is no corrective class available child should have a rest period of thirty to forty minutes each noon.
4. Teacher should be cautioned to treat child with gentleness and consideration and allow him to recite first in class, so as to relieve him from worry and tension.
5. Special arrangements should be made for tardy slips when child has to walk to school and where buildings are far apart.
6. In severe cases program should be lightened or child should go to school only part time. This can be arranged by consultation with the Health and Corrective Physical Education Division.
7. If child seems unwell have his teacher report the fact to the school physician or nurse.
8. No competitive games or sports should be allowed except those sanctioned by the Health Division.
9. In all that you do, try to avoid the suggestion of invalidism. It is a great mistake to make a hypochondriac of any child, because a hypochondriac child will become a hypochondriac adult and a hypochondriac or a neurotic is a burden to himself and society. By realizing the limitations of these little unfortunates and making things easier for them we can prolong their lives and increase their usefulness, without sacrificing discipline or efficiency.

There are about 8,000 children with heart disease in the schools of Los Angeles.

A classification of these children has been made throughout the

schools with more or less routine and accuracy. The grouping is as follows:

Group 1—Children with functional disturbances.
These children are permitted to take part in athletics, with the exception of strenuous activities and competitive games.

Group 2—Children with minor heart lesions.
These children take part in limited and specified athletic events and corrective games.

Group 3—Children with organic heart lesions, well compensated.
These children are assigned to corrective classes only. They may also take part in corrective games. Rest is also prescribed by physician.

Group 4—Children with organic heart lesions where compensation is poor.
Rest is the major program for these children.

Group 1 children with the functional disturbances, have their athletic activities supervised and checked by the school physician. They cannot take part, for example, in competitive races, basket ball, football, or baseball.

Group 2 children with the minor lesions, are allowed by the school physician to take part in certain exercises in which no extra strain is put on the heart and where the games are very carefully supervised, as, for example: golf and certain formal exercises. These children are also given special exercises in the corrective gymnasiums. Exercises are given which will tend to enlarge the chest capacity and indirectly strengthen the heart muscles.

Group 3 children with definite organic lesions, well compensated, are assigned to the corrective physical education classes. They also take parts in corrective games.

All exercises given the children vary in degrees and amount of exertion. The exercise groups are divided into different sections: (1) the passive; (2) the active; (3) the imaginary passive; (4) the imaginary active; (5) the imaginary assistive; (6) the imaginary resistive; (7) second and third degree active. For example, a child with minor lesions might be given second and third degree active exercises whereas a child with organic lesions might be given first degree active exercises, resistive and passive exercises.

To the children of Group 4 with organic lesions, where compensation is poor, only passive and assistive exercises are given, with rest before and after.

I have devised schedules of exercises for these various groups.

Exercise tolerance tests are given once a week in a few schools to test the effect of the exercises. The vital capacity and the

pulse is taken to check the improvement in the chest capacity and the pulmonary circulation. Special care is taken that only those exercises are given that will improve the circulation in the veins and improve respiration, thereby decreasing the work of the heart and increasing the amount of oxygen intake.

All exercises, within a certain limit, tend to exercise the muscle of the heart in a reflex way. Any movement which will in any way interfere with respiration or circulation in the veins is avoided, for instance, hanging, active trunk rolling, forward-lying raising, and sit-lying raising. Chest lifting and respiratory exercises are first to be given in any schedules designed to strengthen the heart muscle.

The heart may also be stimulated and strengthened by tapotement of the back, which should be done under a physician's supervision. A light general massage will assist the venous flow and might be done by the parents under a physician's direction. However, there are heart conditions where massage should not be given; for instance, those with much dyspnea, angina pectoris, etc.

The purpose of the corrective exercises and rest periods is not to direct the child's medical treatment, but to outline a protective and preventive régime with regard to physical development. The heart muscle can be exercised with due care in the same way as any other muscle of the body. Medical treatment is left altogether to the direction of the family physician or the clinic doctor. All questionable heart diseases in children are passed upon by the consulting board of volunteer heart specialists.

There are eight members of this consulting board who meet once a week to aid in diagnosis and outlining the preventive régime with regard to general hygiene and nutrition, in so far as these concern the relation of children to the school work. The board does not direct the child's medical treatment in any way. By this plan great benefit can be accomplished, not only to the child, but also for the school department. The consulting board aims to provide that no child with heart disease shall have its heart reserve taxed or broken. This board also passes upon bulletins which give information as to the general hygiene and the activities of these children in school and at home. It has at its disposal a central place for meeting, instruments, X-ray and fluoroscope, and one cardiograph. It has also the cooperation of the school nurses, school physicians, corrective teachers, private physicians, and parents.

Eight years ago I made a special investigation dealing with the influence of worry and excitement on school children suffering with heart disease, and I found that in such children there is a certain amount of nervous instability. They are extremely sensitive to the remarks of the teacher and their fellow students.

Although I have no definite statistics, I found that children with heart defects are injured by school work when teachers are too strict. In such cases leniency is now shown and the child is asked the first question so that the worry of expectancy is avoided.

Arrangements have been made in the city schools of Los Angeles that children suffering with heart disease may come late to class. Sometimes the rest periods are very short, and it would be difficult for them to reach the classroom without hurry. In most schools they are given an opportunity for rest in the middle of the day, upon the recommendation of the family doctor, the school doctor, or the consulting board.

In regard to foci of infection, provision for eradication of foci has been made, through inspections by school doctors and nurses, who report findings to the parents, to be transmitted to the family physician.

For the past eight years an attempt has been made to work out some definite régime for the protection and prevention of heart defects among school children of Los Angeles. Yet the work is still in its beginning. There is much room for improvement in order to place it on a more scientific basis. It is aimed that this preventive régime should not interfere in any way with the private physician's medical supervision of the child.

From a physical point of view, Los Angeles schools are probably doing more for the prevention and general hygiene of school children with heart disease than is done in most other cities. Los Angeles, however, has no classified educational cardiac classes. I have not enough information to know whether or not such classes should be recommended.

Today many communities in America are beginning to realize the need of special plans for the education of children suffering from heart disease. However, since communities differ greatly, varied and flexible methods to be used in meeting human and social problems are needed. The solution of the problem of the education and preventive care for children suffering from heart disease require the cooperation of the child, the parents, the doctor, and the teacher.

Parents of children who have heart disease can advise and urge their children to learn a trade or profession that lies within their capacity and makes them useful members of society.

There are some kinds of work that no one with heart disease should attempt. By exercising foresight it is possible to see that the child chooses a life work that is well within his ability and that will not cause his heart to break down.

The Chairman:

New York State has many things of which she is justly proud. One is her State Department of Health, another her State De-

partment of Education.

We still further rejoice in the splendid cooperation that exists between these great departments and congratulate ourselves on having such broad-minded able commissioners to lead us in health and education. I am proud tonight to have our State Commissioner of Health sit at my right and to be able to present him to you for a few remarks.

Dr. Matthias Nicoll:

I am very glad to be with you at this your first annual dinner. Though but little acquainted with the nature and purpose of your Association, the attendance and interest taken would seem to portend a successful future. Naturally I am greatly interested in the health of school children. Dr. Howe has accomplished a great deal in the field of school medical inspection in New York State. He deserves much credit for his success under extremely difficult conditions. For several years after he began the work, his staff consisted of one stenographer and a budget wholly negligible. Now, after thirteen years, he has five physicians, one nurse, one dentist and one nutritionist to supervise the health service of about one million school children. Naturally the work cannot be done as efficiently as its importance demands. I do not care to stress the point at this time but believe, and always have believed, that all health service to children including those of school age, should be under the direction of health authorities. You may not agree with me, but I fail to see why the safeguarding of childhood health should vary according to age.

The Chairman:

Our next speaker is not only a great contributor to many a school health program, but a teacher and trainer of others for efficiency in the service.

No one is better qualified than Professor Turner to speak to us on "Important Contributors to a School Health Program."

IMPORTANT CONTRIBUTORS TO A SCHOOL HEALTH PROGRAM

C. E. TURNER, DR. P. H., PROFESSOR OF BIOLOGY AND PUBLIC HEALTH, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

In the topic you have given me to discuss you have used the phrase "school health program" and you have properly implied that this program is a cooperative enterprise carried forward by various workers in the field of health. The term "school health program" seems to me to be an eminently appropriate one—much more desirable in fact than the term "health and physical education" which has recently been suggested as a substitute. If the word health is used as an adjective in the latter term the phrase carries the obviously wrong implication that the health program is made up of health education and physical education alone and

gives no recognition to the basically important medical and nursing program. If the word health is used as a noun, the phrase carries a wrong implication because of its disproportionate emphasis. It groups together under the word health all of the medical, dental, nursing, corrective, administrative, sanitary, and health training procedures making this whole group coordinate in emphasis with physical education.

The Health Section of the World Federation of Education Associations at its 1927 meeting in Toronto, Canada, where some of the people in this audience were present, passed a resolution that the phrase "*school health program*" should be used to describe all school health activities including health teaching and the various health services. The soundness of this recommendation rests upon the fact that the phrase does not mention any specific line of activity. It omits every implication of relative importance and leaves us free to conceive a program conducted by the joint efforts of the great body of teachers and the various specialists in health and in education working together with mutual respect and with only that enviable competition as to who best can serve and best agree. Often there is much in a name and it is to be hoped that this Association will continue to use the phrase "school health program."

In speaking of the contributors to school health work I shall confine my remarks chiefly to three phases of the program, namely physical education, health education, and medical service. This is not because I underestimate the importance of the work of other people. The nurse forms the strongest link between the school and the home. Her assistance to the physician is invaluable and the responsibility for the correction of physical defects rests mainly in her hands. The dental program is becoming of increasing importance and the dentist with his assistants are contributing mightily to the health of school children. The department of home economics has a special health contribution and the special teachers of general and social science are aiding the health program in increasing degree. The lunchroom service relates itself directly to health. Indeed the school janitor has a part in this program because he controls the air which the children breathe and maintains the cleanliness of the school building. It has seemed to me that it would be most interesting to spend the limited time at my disposal in discussing physical education, health education, and medical service.

In the majority of school systems physical education is the most extensively developed and most heavily budgeted of any of the school health activities here mentioned. It is making an important contribution to American education. It has thoroughly sold itself to school people. In some communities it has almost oversold itself where an occasional unwise individual has claimed too great a contribution to health from its activities.

There are two phases of the physical education situation which are worthy of brief comment at this point. The first rests upon the fact that physical activities contribute to other educational objectives besides health. In fact to my mind health is not the major objective in physical education. It contributes to health to be sure in providing vigorous and suitable exercise and in training pupils in the enjoyment of exercise so that vigorous activity will be carried into later life. It contributes also to the development of valuable bodily skills and coordinations. It teaches children to play together. It develops sportsmanship, character, and leadership with a definitely beneficial effect upon the mental and social aspect of the child's personality. These later contributions seem to me so important that I would support the physical education program even if it made no health contribution whatever.

The second comment upon physical education is to the effect that it is not health education. To be sure people who have been trained in physical education are to be found directing the health education program in many school systems. There is not the slightest objection to this *provided* the individual has also had sufficient training in health and in education as well as in physical activities. It is equally true that the director of the health education program does not need to be a physical educator provided he has the necessary training in health, in education, and in school procedure. As we shall see in a moment health education is not an activity which could be added to the duties of the physical education teachers to be carried out with the children as they borrow them from the classroom teacher for short periods of physical activity. The procedure in some communities in which the name of the department has been changed from physical culture to physical training, to physical education, to health education, without any appreciable change in the activities involved can only be regretted.

Health education is the newest of the school health activities. Its chief objective is health maintenance and promotion and it recognizes the production of correct habits and attitudes as even more important than health knowledge, essential as the latter is. It must develop habits and attitudes in the lower grades before the imparting of health knowledge becomes practicable. Since it involves the development of habits and habit formation involves repetition and training, it is obvious that health education lies primarily in the hands of the classroom or home-room teacher. She alone is with a sufficiently small group of children for a sufficiently long time to influence habits materially. No specialist with several hundred children assigned to him or to her can take the place of the classroom teacher but all of the health specialists

in the public school must help the teacher both directly and with the children if the program is to meet with the greatest possible success. Moreover, if we may quote again from the resolutions of the Health Section of the World Federation of Education Associations "The responsibility for directing the health education program in school systems should be assigned to an individual with sound training in both health and education and with a knowledge of school procedure."

The importance of school medical service can hardly be overestimated. This Association, which is bringing together the school physicians of the country for the discussion of professional, technical, and administrative problems has unlimited possibilities for the advancement of school health. Its organization was one of the most important and progressive steps in the last decade of public health. The maintenance of medical authority in clinical matters, the further recognition of clinical ability, the proper location of clinical responsibility, increased remuneration for the school physicians and more time for their work in order that its quality may be further improved—all of these things are of the utmost importance. The plea of some of the other speakers on this program for improved conditions and public appreciation which will make it possible for the school physicians of this country to render a service more in accord with their own clinical ideals has touched a responsive cord in all of us. It would be unfitting for me to discuss the technical side of school medical service but perhaps it is not inappropriate for me to say that the people who are primarily interested in the health education of school children in America are heartily in accord with the principle and object of this Association. We hope that we may be of help to you and that together we may move forward toward the general objectives of the school health program.

The administration of school health is not easy. The school is an educational institution and its primary activity is instruction. It is administered by a school superintendent who has the responsibility for coordinating all school activities. Either he, himself, or his appointed representative must be responsible for the coordination of health activities. Perhaps the most important item in this connection is the establishment of proper relationships between the various health specialists and the great body of classroom teachers.

Successful school health administration demands that each group shall know not only its own objectives but the objectives and activities of every other group touching the health field. It is not necessary and in fact it is impossible for the administrator to possess all of the professional skills of the various specialists who report to him. In schools, as in industry, the good administrator places each technical or professional service under a com-

petent and qualified individual who shall have both authority and responsibility in his particular field. He then seeks to develop mutual respect with cooperation from all and condescension from none. The educator must have a proper respect for clinical knowledge and skill. The health specialists must have an adequate respect for educational problems, skill, and technique; and incidentally one of the best ways for any of us to secure the respect to which we are entitled is to develop and exhibit a proper respect for the other types of professional workers with whom we come in contact.

Mr. Chairman, I felt considerable hesitation in accepting the honor of your invitation to one who is not a physician but a mere health educator. It has been my good fortune to know you and your splendid work. My good fortune has also permitted me to become associated to some extent with the able man who has just been elected the new president of this Association and with the outstanding program of school health which Dr. Ceconi has under way in the city of Boston—a program for which it would be hard to find an equal. It was your joint solicitation which inflicted me upon this innocent audience which deserves better things. I congratulate the American Association of School Physicians upon its splendid start and prophesy for it a brilliant and useful future. If my humble service can at any time and in any small way contribute to your great undertaking it is at your disposal.

The Chairman:

The dentist and the physician are becoming more and more cooperative. More and more frequently we find them in consultation regarding health conditions. Both are more appreciative of the many etiological factors that may enter into dental or organic health. This professional team work is indeed a healthy sign for preventive and curative dentistry and medicine. Let us hope it will continue to move forward under such able leadership as Dr. Guy S. Millberry, Dean of the Dental Department of the University of California who will speak to us.

THE RELATION OF MENTAL AND GENERAL HEALTH TO DENTAL HEALTH

DR. GUY S. MILLBERRY, DEAN OF THE DENTAL DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA

It is a privilege to respond to this topic in behalf of the dental profession because of the great interest shown by school physicians and the other organizations which are in convention in this city at this time.

The status of dental health education is a condition growing out of the method of training dental students apart from medical

students rather than with them. We cannot separate the oral cavity from the body either as a focus of disease contributing in part to general debility or as a functional part of the alimentary tract, which is essential to growth and development.

General health and dental health are in a measure synonymous terms, because we expect a man in good physical condition to have clean, sound teeth.

We must recognize the oral cavity as one of the portals of entry for infectious diseases into the body and hence the health of this part of the human body is relatively important.

I believe that this is generally agreed to both by physicians and dentists and they also agree that it is more important to prevent dental diseases than to cure them. The most favorable time to do this is between the ages of three and twelve years, if we can for the moment exclude the pre-natal period and the period of infancy, at which times the nutritional factor is of greater importance than the hygiene factor in the development of the teeth and their preservation.

One has only to observe the acute or chronic diseases of the mouth to be cognizant of their effect upon the body or to consider the very delicate balance of bodily function required to maintain normal growth and development and conversely the very slight disturbance necessary to upset this balance to appreciate the importance of dental health.

One school physician at this convention has stated that 90 per cent of the cases of heart disease in children is due to focal infection and that children are more subject to respiratory diseases than adults. In both of these instances, the oral cavity offers a means of ingress for the organisms which are the causative factors in these diseases.

The relation of mental development to dental health permits of a more liberal discussion than the relationship between general health and dental health.

A definite premise should be established: Shall we consider mental health a condition of mind as defined by any religious-philosophic concept or a condition based on the concept that the mind is a function of the nervous system and hence subject to change by metabolic or infectious processes or shock? If the latter is accepted as a logical premise, then the health of the oral cavity is definitely related to the mental development of the child.

Two types of mental cases may be considered: (1) a dull, stupid, indolent type and (2) the defective or delinquent type.

From the viewpoint of the human organism obviously either type may be affected by a diseased mouth. Data are extant that show improvement in both types when the oral cavity is restored to and maintained in a healthy condition.

Fones' work in Bridgeport and the school dental service in McDowell County, West Virginia, where preventive and corrective dental service has been rendered, show a definite result of higher scholastic averages in the grade schools, negligible retardations and more mental alertness than previously existed in these localities.

The theory that focal infection is directly responsible for the mental condition of the insane is questioned by many psychiatrists and psychologists. If it be true that focal infection in the oral cavity is a causative factor, then the eradication of foci of infection in the mouth, where it can be done so easily, is a grave responsibility resting upon the professional groups as well as the state. How many psychiatric and psychologic examinations of patients are preceded by or followed by complete physical examinations, including full mouth radiographs and laboratory examinations?

Those dentists interested in dental health education believe that the health of the oral cavity must be maintained if one would keep in good physical condition. Further, it is equally desirable to maintain this condition for esthetic and cosmetic reasons. The oral cavity is easily kept in a good, healthy condition and practically all dental disorders are preventable, though very few of them are prevented.

All available records in all countries point conclusively to the importance and value of maintaining a clean mouth, sound teeth and healthy gums and I trust that the dental profession will do its share in aiding this association in carrying on its health program in the schools of the United States.

The Chairman:

Many are present who have done much to promote school health service. Some have labored in one field, some in another. In the field of Health Education Miss Sally Lucas Jean has accomplished much. You will be delighted, I am sure, to see and hear her.

Miss Jean:

The meetings of the American Association of School Physicians which are being held in connection with the American Public Health Association, are most gratifying, both in the interest displayed by the audience and in the nature of the papers presented.

Those of us who are engaged in promoting school health programs recognize the vital part played by the school physician in carrying out our plans, but we are confronted with a vicious circle; that is, a lack of interest on the part of the public to appropriate sufficient funds for school physicians, which minimizes the

significance of this factor in the school health program.

Annual thorough physical examination for all people is being urged by the medical profession and the millions of children in our schools today will be the adult citizens of a few years hence. If we are to make a favorable impression upon these future adults, as to the worth whileness of thorough physical examinations, we cannot afford to offer them the type of superficial examination which is now imposed upon the school physician because of time limitation.

There is one way by which this vicious circle may be broken, and that is to examine only as many children as can be given a thorough physical examination. For instance, one of our cities faced with the problem of an insufficient appropriation to permit the appointment of an adequate staff of school physicians, decided to expend their energies upon a few schools in which they demonstrated the methods school physicians desire to use in the conduct of their work. The parents in this city awakened to the fact that one group of children was having a higher grade service than others and petitioned the authorities for equally efficient examinations of all school children. This method of arousing public consciousness might well be duplicated.

The group of mother, doctor, nurse and teacher, considering a child's body stripped to the waist, represents a type of service which cannot fail to influence both parents and children as to the importance of thorough physical examinations. The children examined under such circumstances will carry away with them the naturalness of such a procedure and a sense of the worth whileness of it; and the parents, the confidence that thorough physical examinations are essential to sustain health.

All teacher training institutions are training teachers, to some degree, at least, to impart health information and to create an interest in health practices. They are stressing the school health program, and school health literature is enormously in demand, but all this cannot have the desired result without satisfactory service of school physicians.

I congratulate Dr. Howe and the members of the Executive Committee upon the reviving of the American Association of School Physicians and believe that the importance of this movement cannot be estimated.

Our goal for the building of healthy children will have been reached when parents, the school and public health authorities, the nursing and medical professions, work together toward creating in the minds of children the desirability and the knowledge of how to attain health.

The Chairman:

Indiana is doing some excellent work in its State Board of Health, in Child Hygiene. Dr. Schweitzer who is directing this service is with us. We will all be pleased to hear from her.

Dr. Schweitzer:

From the educational standpoint, the health of every child is an important consideration. When the child first starts to school, he may come vigorous, free from defects, and free from infections. He may use initiative in solving his problems and have the ability to adapt himself to new personalities and conditions. Or he may be flabby, poorly nourished, with tooth, posture, eye, throat, or heart defects. He may be a carrier of infections which he will distribute impartially to his fellows. He may be frightened, dependent, and lost in new surroundings with no aptitude for adjustment.

The teacher who can visualize from the appearance and behavior of each new pupil the factors which are responsible for his present condition or who can discover these factors has a sound basis for her educational efforts.

The Child Hygiene Division of the Indiana State Board of Health has conducted educational projects affecting both parents and teachers. Child health consultations have been held where parents have been advised concerning the condition and needs of 65,696 children, the importance of periodic examinations, and of early immunization to diphtheria and smallpox. These are usually held in school buildings. Teachers are interested in consulting with physicians and nurses concerning problem children in schools and witness the examination routine whenever possible.

Mothers, teachers, and other women have taken the course in maternal, infant, and child care. The five lessons have been presented in colleges and in every county and practically every township in Indiana to 1,210 class groups enrolling 53,405 women. Education in mother and child care, diet, exercise, posture, growth and care of teeth, habit training and other subjects has been supplemented by the distribution of 1,119,286 health pamphlets.

Health exhibits, motion pictures, and lectures have reached 561,415 persons. Special demonstrations and projects undertaken annually are Child Health Week program at Winona, Lake Chautauqua where University Extension courses are also in progress; the Better Babies program at the State Fair where demonstrations require two specially constructed buildings, a playground and rest park for mothers; and the annual Child Health Day program designed to stimulate health progress for all ages of children.

Added to the academic instruction in hygiene, the teacher seems to need some practical training in recognizing departures from normal physical conditions of children which will enable her to

know when to isolate a child and to send him home and when to encourage activity.

Health projects in which the children may share and may observe their progress improve the health, create interest, and greatly simplify problems of school management. An expansion of the state child hygiene program will help make possible for all ages of children a well-rounded health program.

The Chairman:

Our next and last speaker has for many years been a pioneer in school medical inspection and health service. With his constructive vision he has guided us wisely in the past. With his years of experience, I know not how many, he is still a great leader. No one is better prepared to speak of either the past or the future of the work in which we are all so deeply interested. In whichever direction his thoughts may turn I am sure we will all be delighted to hear from Dr. Cornell.

Dr. Cornell:

To be pointed out as a veteran is not altogether an unmixed pleasure to the object of attention. If he is old and feels old, then the rôle of Nestor may be pleasant. At least it brings kind attention. Fortunately I am among those who, almost twenty-five years ago, took up the new field of school medical work while in the flush of youth. Thus in present middle age I can wear the medal of the pioneer while looking forward to many years of future work.

I would rather speak of the future possibilities of school medical and nursing work than of historical matters. We are on the threshold of greater things and our faces should be turned forward, not backward.

I would say that the chief problems facing us are both medical and administrative. In the administrative field we need better records, and better reports to the parents regarding the health of their children. As long as we content ourselves with reports which mention nothing but existing diseases and defects, we fail to take advantage of our opportunity to make a full and positive report to the parent regarding every angle of health in the child, thus establishing ourselves in the minds of every one as health agents properly equipped to deal with every phase of child health.

One of our efforts should be to obtain suitable accommodations in schoolhouses in which to make good medical examinations. We are in a vicious circle in which physical examinations are made by hundreds of school physicians without suitable facilities to make them properly, with the critical eyes of other school health workers, the great teacher group, and the medical profession itself judging us by our results. This is not fair to us, to

the school or health authorities that employ us, or to the children on whose condition of health we report.

We need a better correlation of school health work with preschool health work. There is no organized health service for children between two and five years of age—an age when personal hygiene powerfully affects general health and growth, and when diphtheria takes its toll of unimmunized children. Every school house should be a community health center. The school building should be available on Saturdays for health work with no extra expense to any one.

Assuming that we have decent accommodations in the school houses for the performance of medical work, our plan of physical examinations of children should include at least one examination of the child, during its early school life, at which time the mother should be present and the child given a thorough examination, including a health consultation with the mother regarding its food, hours of rest, opportunity for sunshine and fresh air, and mental hygiene. We should not be content with corrective work only. In these modern days prevention of much disease is easily possible and it should be part of our program.

These objects cannot be accomplished except by the special training of our school physicians and nurses in the subjects of personal hygiene, mental hygiene, social service, and the most important and common diseases and defects occurring in children of school age. Even assuming that our school physicians and nurses are better than the average members of their professions, the fact remains that the members of both of these professions are poorly trained in matters of public health, and the ultra-specialism existing in medical practice has resulted in indifference, and then blindness and incompetence, of the average physicians to such important conditions as eye strain, common orthopedic defects, juvenile tuberculosis, heart disease and mental hygiene. I may add that this unfortunate situation has been capitalized by various non-medical workers in the field of public health with resulting question in the minds of some of the public whether these latter persons by their positive professions and actual practical work, do not know more than the physicians themselves—the latter professionally pledged not to advertise their own personal virtues, and suffering from the one-sided professional development previously mentioned.

In the reversion to a better and more natural situation, the school physician should take the lead. His influence will be as great as the magazine Hygeia, which fortunately for the medical profession does remind the public that the medical profession is the one that should be consulted for the conservation of health as well as to regain it. During the next three years the efforts

of our Association should be aimed toward bettering the training of our own workers. The other desired results will naturally follow.

The Chairman:

This brings to a close in a most fitting and encouraging manner our first Annual Convention. That our successes of the day portend continued interest in and usefulness for the American Association of School Physicians, there should be no doubt. Let us all attempt to attend next year's meeting in Minneapolis. In the meantime let us do such as we can to still further strengthen the Association, that it may be the better prepared to accomplish the purposes for which it was organized.